Session Two:

AGRICULTURAL LIFEWAYS AND TECHNOLOGIES

African traditions helped develop agricultural methods that enriched the Americas. These traditions or lifeways shaped the tenor of rural life during periods of slavery, sharecropping, and black-owned farms. Africans implanted their technological "know-how" and cultural traditions on the rural landscape and agricultural industry.

Rice, Slaves, and Landscapes of Cultural Memory

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The Memory of Iron: African Technologies in the Americas

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Judith Carney

By 1860 rice cultivation in the U.S. South extended over 100,000 acres along the coastal plain from North Carolina's Cape Fear River to the St. Johns River in Florida.(1) (Figure 1) Large landholdings and a sizeable labor force characterized the ante-bellum rice economy, with plantations concentrated in the hands of some 550 planters and worked by 125,000 slaves.(2) On the eve of the Civil War, Georgia, representing less than one-third of the total land in rice (30,000 acres), accounted for 28% (52.5 million pounds) of the region's total output: 187.2 million pounds.(3)

The rice plantation economy of South Carolina and Georgia has received considerable historical and geographical attention for its role in the regional economic development of the antebellum South. A nostalgic view of the rice economy persisted long past the cessation of planting in the 1920s due to numerous commentaries that documented the lifeways of planters, their achievements as well as their ingenuity in shaping a profitable landscape from malarial swamps.(4) In these accounts, slaves are presented as having contributed little but unskilled labor to the creation of the rice economy. In 1974 this planter-based view changed dramatically with the research of historian, Peter Wood, who carefully examined the role of slaves in the Carolina plantation system during the colonial period. His scholarship recast the prevalent view of slaves as mere field hands, to one which showed that they contributed agronomic expertise as well as skilled labor to the emergent plantation economy.

Wood's argument rested upon several threads of archival evidence, namely: the presence of slaves in South Carolina from the onset of settlement in 1670, early colonial references suggesting that bondsmen produced their own subsistence crops, the lack of prior knowledge of rice farming by the English and French Huguenot planters, but its familiarity to many of the colony's African-born slaves.(5) Further support for Wood's pathbreaking research occurred in 1981 when another historian, Daniel Littlefield, drew attention to the antiquity of African rice farming practices as well as the demographic basis for South Carolina's slaves during the early colonial period. Littlefield showed that 40% of the slaves entering the state during the initial decades of rice experimentation and development originated in the area of West Africa where the crop's cultivation predates the arrival of Europeans.(6)

While this scholarship has resulted in a revised view of the rice plantation economy as one of both European and African influences, the role of African slaves in its evolution is still debated. Current scholarship questions whether planters recruited slaves from West Africa's rice coast to help them develop a crop whose potential they independently discovered, or whether African-born slaves initiated rice planting in South Carolina by teaching planters to grow a preferred food crop. Further understanding is hampered by the absence of archival materials that document a tutorial role for African slaves. But the silence of the historical record on a critical role for slaves in teaching planters rice cultivation is, perhaps, unsurprising given the paucity of materials available in general for the early colonial period as well as the fact that accounts of slaves' lives were placed in the hands of white society who justified slavery by denying the intellectual capacity of its victims.

This paper adds a geographical perspective to the historical research initiated by Wood, in order to examine the likely contributions of African-born slaves to the colonial rice economy. Attention

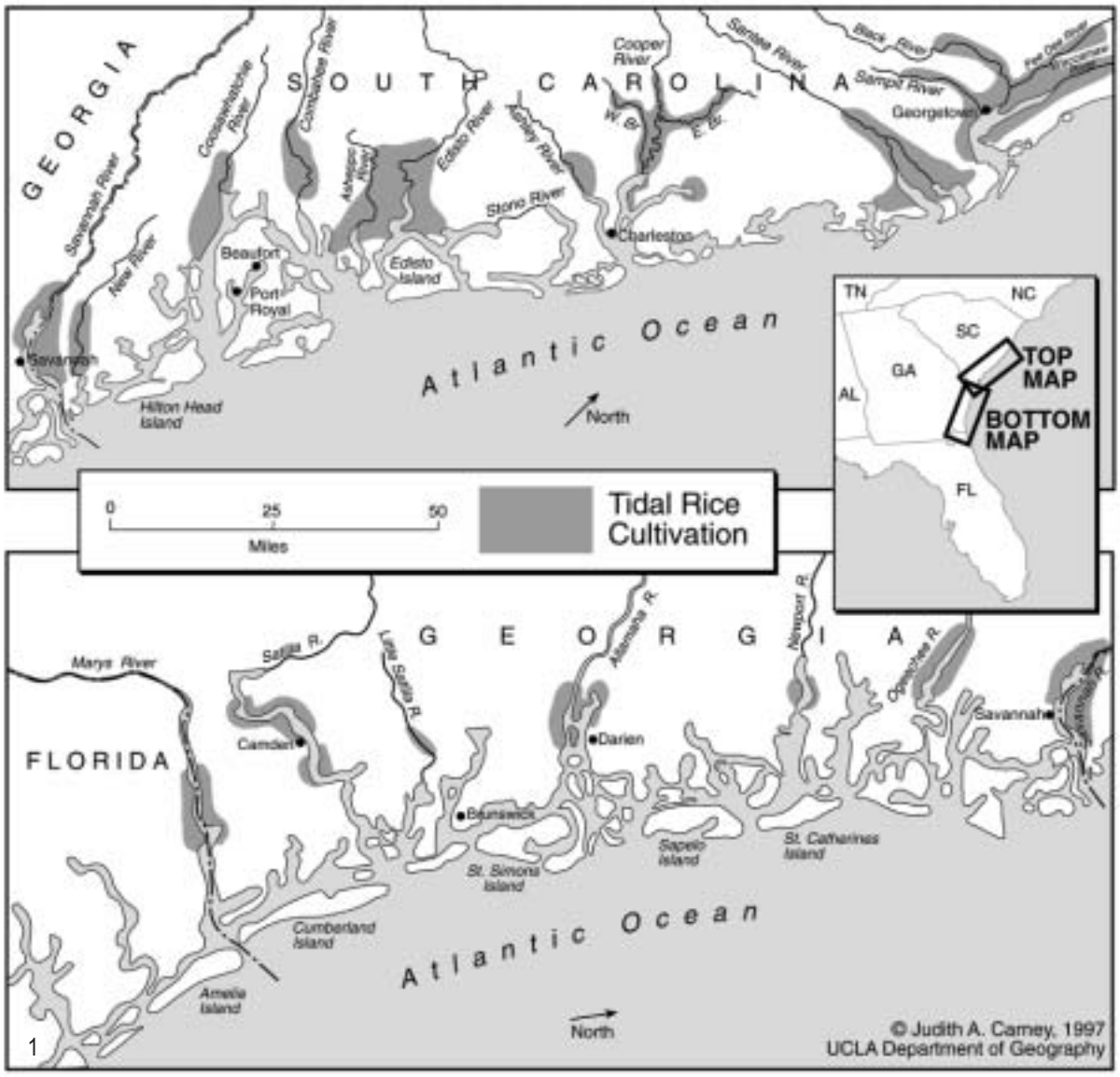


Figure 1. Map of Coastal South Carolina tidal rice cultivation.

focuses on the principal environments planted to rice on both sides of the Atlantic, and the techniques developed for soil and water management. Emphasis is placed on the initial century of rice development in South Carolina, 1670-1770, from the colony's initial settlement by planters and slaves to the crop's expansion into Georgia.

The paper begins by identifying the primary lowland environments where rice was planted on each side of the Atlantic, which are presented in a classification system based on the principal water regime regulating cultivation. The discussion next shifts to the historical evidence for the presence of such systems in West Africa from the earliest contact with Europeans, and the existence of key principles of soil and water management that were to resurface later in Carolina rice systems. In the third

section, the discussion shifts to South Carolina and Georgia where the rice economy unfolded over time from rainfed to inland swamp production, and culminated in the tidewater system.

Rice Cultivation Systems in the Atlantic Basin

When the Portuguese arrived along the West African coast in the mid-fifteenth century, they encountered rice cultivation over a broad area from Senegal to Liberia.(Figure 2) Rice *(Oryza glaberrima)* is an ancient West African cultivar that was domesticated independently of Asian rice *(Oryza sativa)* some two thousand years ago along the floodplain and inland delta of the Upper Niger River in Mali.(7) The Atlantic slave trade led to the introduction of some Asian *O. sativa* varieties to Africa's west coast, but their diffusion remained limited until Europeans promoted them during the twentieth century with colonialism.(8)

Rainfall in the West African rice zone averages between 800-2000 millimeters, encompassing a wider range than that found in the cultivated area of coastal South Carolina and Georgia (1100-1600 mm).(9) Within the West African rice region precipitation increases steadily from north to south, with slightly higher averages along the coast. African cultivation is not, however, limited by rainfall constraints. Over the past two millennia farmers carefully adapted rice planting to other forms of water availability by growing the crop in moisture-holding soils, depressions fed by subterranean water sources, and floodplains inundated by tidal flow. Consequently, rice planting occurs in a variety of environments, which include mangrove estuaries, alluvial floodplains, low-lying depressions, grassland savannas, and upland forests.

Three major water regimes are used for rice cultivation: rainfall; artesian springs, perched water tables, or catchment run-off that keep inland swamps wet; and, river tides that flow over floodplains and coastal estuaries.(10) By the 1730s each of these systems and their sub-types had also emerged in South Carolina.

As the form of water availability for rice planting is a response to the cropping system's location along a landscape, West African cultivation can be visualized as occurring along a lowland to upland gradient of changing ecological conditions. Planting takes place simultaneously in distinct environments—a practice that enables farmers to manipulate one or more moisture regimes for crop production.(11)(Figure 3)

The longstanding practice of growing rice in distinct environments from plateau, slope, and valley bottom to floodplain confers several advantages. By taking advantage of multiple water regimes, farmers extend rice growing beyond the limits of the precipitation cycle. In so doing, they reduce potential labor bottlenecks since cropping demands (field preparation, weeding, and harvesting) in each environment occur at different periods during the agricultural season. Reliance on several forms of water availability, moreover, enhances subsistence security by minimizing the risk of crop failure in any given year.

Of the three forms of rice cultivation, rainfed rice depends solely on rainfall for cropping. It is planted at the top of the landscape gradient, hence its frequent designation, upland rice. West African farmers commonly cultivate the crop on soils supporting mixed woodland vegetation that is partly cleared and burned of surface debris. Cattle form a critical part of the rainfed rice system, as the animals are seasonally herded into the field to graze the stubble after the harvest,

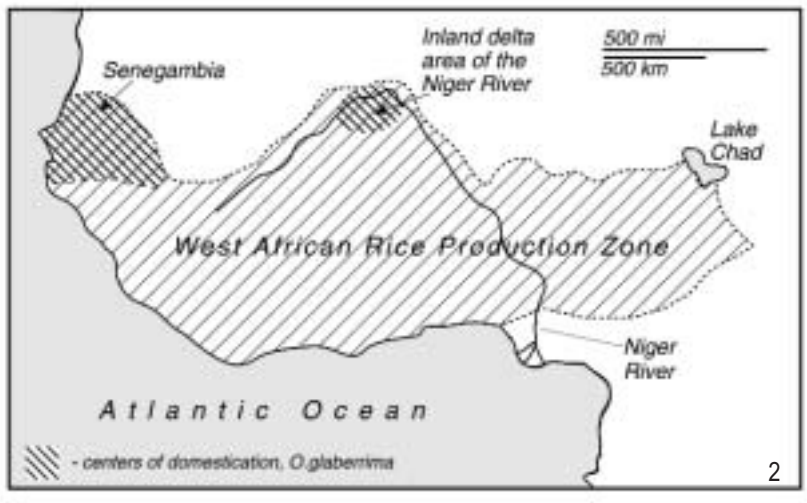
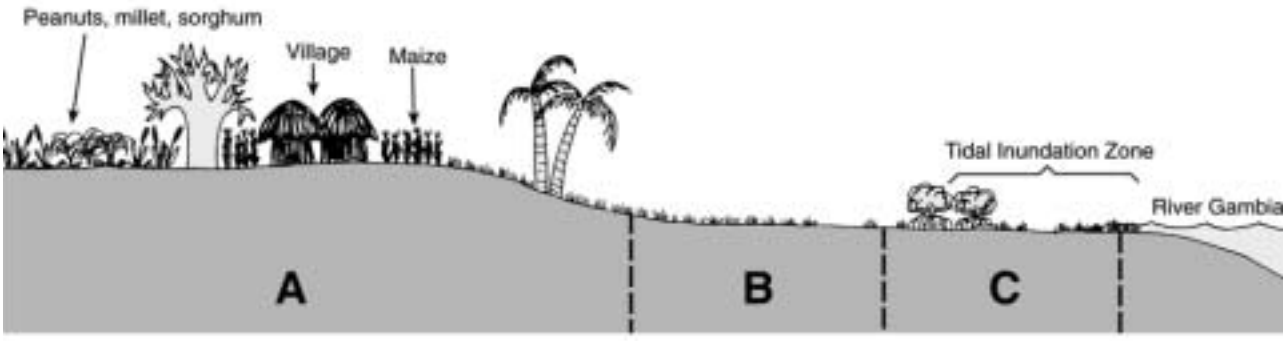


Figure 2. West African rice production zone. Adapted from P. Richards, "Upland and Swamp Rice Farming Systems in Sierra Leone: An Evolutionary Transition?" in Comparative Farming Systems, *eds. B.L. Turner and S. Brush (New York, 1987), p. 157.*



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Upland Inland swamp Tidal

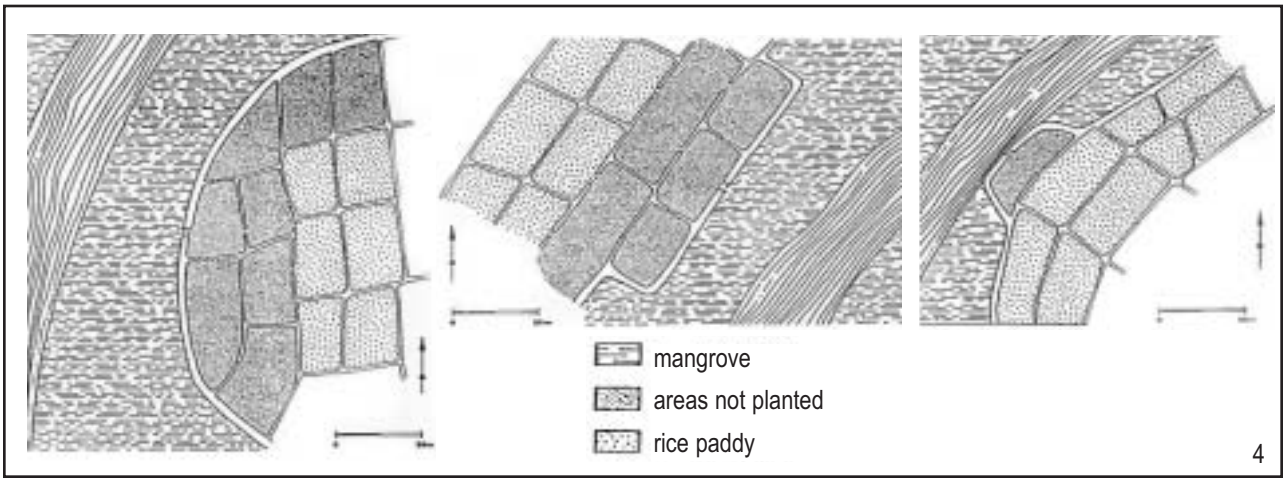

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Figure 3. Rice cultivation along a landscape gradient in central Gambia.

Figure 4. Earthen embankment protects ricefields from tidal action.

Figure 5. Use of bamboo for Sluices in rice field, Guinea-Bissau. Photo: J. Carney.

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their manure fertilizing the soil. When the cropping cycle ends, the field's land use shifts to cattle pasture.

Rice planted in inland swamps, the second system, enables the capture of groundwater from artesian springs, perched water tables, or catchment run-off. Plots are often enclosed with small earthen embankments to trap rainwater or stream run-off for soil saturation during drier cycles of the cropping season. Water level within the field can be lowered by piercing the plot bunds.

The remaining major African production system occurs in areas of tidal flow, on floodplains of rivers and estuaries. Dependent upon tides to flood and/or drain the fields, tidal cultivation involves a range of techniques from those requiring little or no environmental manipulation (planting on freshwater floodplains) to ones demanding considerable landscape modification (mangrove rice cultivation along coastal estuaries). The complex water and soil management principles embodied in tidal production are critical for examining the plausibility of African agency in the transfer of rice cultivation to the Americas.

Tidal rice cultivation occurs in three distinct floodplain environments: i) freshwater rivers, ii) seasonally saline rivers, and iii) coastal estuaries or the lower reaches of rivers affected by permanent marine water conditions. The first two involve similar methods of production—letting river tides flow over the floodplain rice fields—while the third system combines principles of each major rice system for planting under more challenging soil and water conditions. The floodplain is composed of two distinct micro-environments: the one adjoining the river and irrigated by daily tides, and another located at the inner margin, where the landscape gradient begins its rise and is reached only during high tides.(Figure 3) Rice cultivation, moreover, occurs in floodplains influenced by seasonal or permanent river salinity. In the first, planting occurs after the rains push the saltwater interface downstream for at least the three months needed to complete a cycle of cultivation.

In tidal areas of permanent salinity (known as mangrove rice), the most sophisticated West African production techniques are in evidence. This system has received insufficient attention by historians of rice development, who have looked to West Africa for potential influences in South Carolina and Georgia.(12) Comparisons between rice systems on both sides of the Atlantic Basin have understandably focused on tidal freshwater rivers, like those planted to rice in South Carolina and Georgia. But by separating out one floodplain system for comparison from the totality of those planted, the full range and complexity of agronomic knowledge that informs West African rice cultivation is missed.

Unaware of the complex principles Africans have long deployed to plant different types of floodplains, historians of rice origins in the South have minimized the real contribution of slave knowledge to the development of the tidewater system because the similar production environment along West African freshwater rivers involves very little landscape transformation.(13) The emergence of the sophisticated tidewater system that led to Carolina and Georgia's economic prominence remains unchallenged as the product of European technological mastery and ingenuity. Yet, a careful consideration of the mangrove rice system along coast estuaries in West Africa illuminates the agency of Africans in developing principles later deployed in the tidewater system.

West African rice production in tidal estuaries occurs south of the Gambia River in areas of permanently saline water conditions where rainfall generally averages 1500 mm annually. These are environments mantled by extensive stretches of mangroves, whose aerial roots trap alluvium carried by marine tides. The deposited organic matter makes these soils among the most fertile of the West African rice zone, but they require careful management to prevent oxidation and their transformation into a toxic acid-sulfate condition. By manipulating several water regimes and developing extensive drainage systems for its control, the mangrove rice system reveals the complex assemblage of knowledge that would transfer to the tidewater rice fields of the South.

Rice established in coastal estuaries depends upon enclosing the site chosen for cultivation with an earthen embankment, which acts as a barrier against the flow of marine tides.(Figure 4) Careful attention to landscape guides the location of the principal drainage canals, which are used to capture rainfall for irrigation. The perimeter is divided into individual rice fields by forming a series of lower embankments or berms perpendicular to the main one, again to assist in water control. Seedlings are established upon the furrows of individual plots.

The mangrove rice system combines the two principles of water control that later emerged in Southern tidewater production. Rainfall is captured by laying out a system of canals for irrigation as well as controlled flooding to drown unwanted weeds. Sluices built into the berms and main embankment enable control over water flow for field submersion as well as drainage. Fitted with valves made from hollow tree trunks and plugged with palm thatch, sluices in the individual plots drain into the principal one built into the embankment.(Figure 5)

Impounding rainwater, which is evacuated into the estuary at low tide, floods the field. Several years of rainfall are required before the field is initially desalinated, with the process at times hastened by directing the flow of seasonal freshwater springs into the perimeter to leach out salt residues.(14) Cultivation commences once desalination is completed although farmers depend annually on the rains to rinse accumulated dry season salt residues.

Each year soil fertility is renewed during the dry season by periodically opening the sluices at high tide to enable the entry of marine water. This action results in the deposition of organic matter, albeit of saline origin, but importantly, prevents the oxidation that leads to acid-sulfate soil formation. In the month or so prior to the onset of the rainy season, the sluices are once again closed to bar the entry of saltwater. A new cycle of production ensues by layering the ridges with accumulated deposits of swamp mud. Considerable effort is devoted annually to maintaining the system's earthworks, but yields exceeding two tons per hectare make the mangrove system among the most productive traditional African rice system ever developed.(15)

The complex soil and water management embodied in growing rice in multiple micro-environments, along a landscape continuum, formed the basis for a sophisticated knowledge system that was in place long before the Atlantic slave trade. The adroit manipulation of numerous landscapes that characterized West African rice cultivation reveals numerous affinities with the process of technology development in tidal rice, the antebellum era's quintessential production system.

Historical and Geographical Continuities Across the Atlantic

When Islamic scholars followed pre-existing overland trade routes to the Malian Empire in the fourteenth century, they arrived in the heart of West African rice domestication where food surpluses had sustained empire formation from the ninth century.(16) These earliest commentaries on the crop's cultivation note its abundant harvests and the sale of surpluses regionally.(17) More detailed descriptions of West African rice systems came later, with the arrival of Portuguese vessels along the Atlantic Coast from 1453. Portuguese vessels established the pattern of rice purchases that would later increase demand for African surpluses for provisioning slave ships across the Middle Passage.(18)

The proximity of the mangrove rice system to Portuguese navigation routes elicited considerable attention from an early date. When a prolonged cycle of drought disrupted mangrove rice cultivation in the Sine-Saloum estuary north of the Gambia River in the fifteenth century, land use shifted to collecting the accumulated salt deposits. Diogo Gomes, the first Portuguese captain to enter the estuaries of the Geba (Guinea-Bissau) and Gambia Rivers in 1456, observed that the regional trade in a red salt originated on such abandoned rice fields.(19) De Almada, in 1594, provided a more detailed description of the mangrove rice system that characterizes rice planting in coastal estuaries south of the Gambia River to this day. He noted the use of embankments and canals to impound rainwater for seedling submersion and desalination as well as ridging to improve soil aeration.(20) Thus, long before the permanent settlement of South Carolina, De Almada's description reveals the existence of the principles of irrigated, or mangrove, rice cultivation from the earliest period of contact with Europeans. The eighteenth century slave captain, Samuel Gamble, so marveled at the complex system that he provided a diagram of field layout to accompany his description of water management techniques.(21)(Figure 6)

Discussion of the rainfed and inland swamp cultivation systems away from coastal and riverine access routes is documented, ca. 1640, in a manuscript published by an Amsterdam geographer, Olfert Dapper. Relying upon information supplied by Dutch traders operating in the region currently known as Sierra Leone and Liberia, Dapper reported rice cultivation along a lowland to upland landscape gradient in low-lying swamps as well as with rainfall.(22) Direct observation of these systems, however, only came later in the mid-eighteenth century when Europeans financed overland expeditions for exploration, trade, and science.(23)

The growing dispersal of Europeans into the West African interior during the nineteenth century brought more detailed commentaries on the burning of forests for rainfed rice, the field's subsequent rotation for cattle grazing, as well as the use of earthen reservoirs in inland swamps for water impoundment against drought.(24) This form of irrigation drew the interest of the French explorer, Caillié, who in 1830, noted:

> "As the country is flat, they take care to form channels to drain off the water. When the inundation is very great, they take advantage of it and fill their little reservoirs, that they may provide against the drought and supply the rice with the moisture it requires."(25)

Figure 6. Baga rice cultivation. Courtesy: National Maritime Museum, Greenwich, England.

Rice Cultivation in South Carolina

Slaves accompanied the first settlers to South Carolina in 1670; within two years they formed one fourth of the colony's population, their numbers surpassing whites as early as 1708.(26) By 1690, one plantation manager discussed experiments with sowing the cereal in 22 different locations in South Carolina.(27) The first rice exports are recorded in 1695 with one and one-fourth barrels shipped to Jamaica.(28) The economy was being increasingly oriented to rice, and in 1699 exports reached 330 tons; by the 1720s, rice had emerged the leading staple.(29)

What is significant about this early period of rice development is the documented presence in South Carolina by the 1730s of the three principal West African systems: rainfed, inland swamp, and tidal. But unlike West Africa, where these systems of production frequently occur simultaneously, their unfolding in colonial South Carolina represented a distinct stage in the evolution of its plantation economy. The initial emphasis on the rainfed system shifted in the early eighteenth century to the inland swamps and from the 1730s, increasingly to tidal (tidewater) cultivation.(30) The unfolding of rice cultivation in South Carolina and Georgia as an export crop for European and Caribbean markets embodied a different rationale than that in West Africa. Food security no longer required the planting of rice in distinct micro-environments. Instead, mercantile objectives rested on selecting a specific production environment for emphasis at different points in time.

The first production environment used for growing rice in South Carolina was the rainfed system which, as in West Africa, formed part of a land use system based on agriculture and cattle

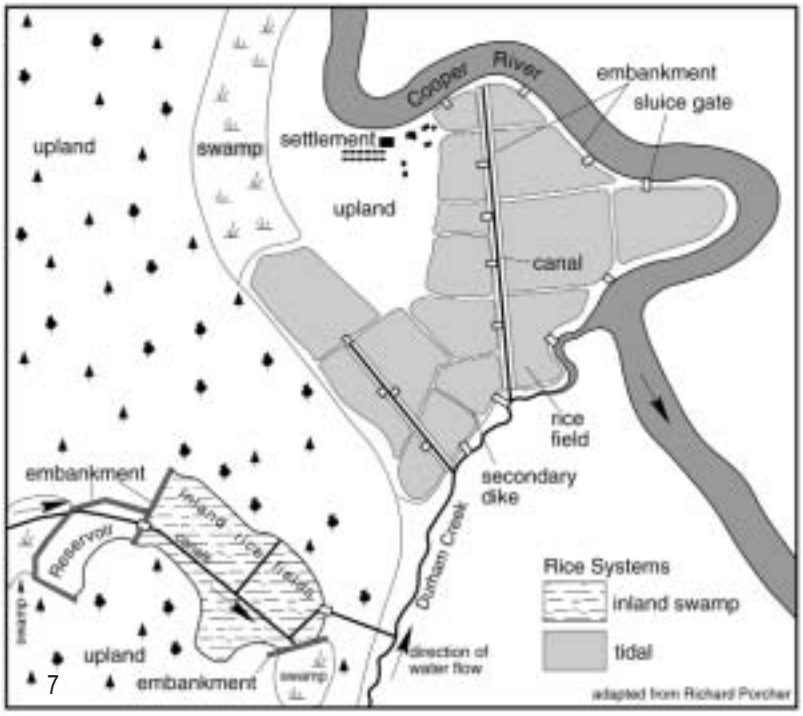

Figure 7. Inland and Tidewater rice system, South Carolina. Location: Western branch of the Cooper River. Courtesy: Richard Porcher.

grazing. Slaves cleared the forests, extracting the marketable pitch, tar, and resins from pines, and then planted subsistence crops, like rice, as a rotation with cattle, whose manure maintained soil fertility.(31) These activities resulted in the export of salted beef, deerskins, and naval stores which, in turn, generated the capital for additional slave imports. With the dramatic increase in the slave population from 3,000 (1703) to nearly 12,000 (1720) and 40,000 (1745) rice cultivation became the principal occupation of slave labor.(32)

During these decades of escalating slave imports, the land use system based on forest products and rainfed rice in rotation with cattle grazing, had shifted to cultivation in inland swamps.(33) The focus on inland swamp cultivation represented the first attempt to control water for irrigation in South Carolina rice fields, but increased the demand for slave labor to construct the berms, ridges, and sluices critical for water control. Like its counterpart in West Africa, inland swamp cultivation depended upon impounding water from rainfall, springs, high water tables, or catchment run-off. Small earthen embankments enabled water capture for irrigation or field flooding to depress the growth of opportunistic weeds, thereby reducing the onerous labor demand of weeding.

Field flooding for irrigation and weed control occurred in a variety of inland swamp environments. For instance, swamps located within reach of streams and springs had dikes placed at the high and low ends. The lower dike or embankment kept floodwaters on the field while the upper one enabled the passage of stream or creek water. Each dike was equipped with a sluice, the lower one used for draining the field as desired, the upper one allowing water to flow onto the field when needed.(34)

Rice planting could also occur in inland swamps formed on salt marshes.(35) Under special circumstances, such as the location of the saline swamp near the terminus of a freshwater stream, the plot could be desalinated and then planted to rice. In such cases, the embankment at the lower end of the swamp permanently blocked the entry of salt water, while a sluice in the upper embankment delivered stream water to the plot initially for desalination and then, for irrigation and weed control. This system functioned along the lower reaches of the Cooper River "nearly within sight of the ocean."(36)

The variation in these inland swamp systems embodied a range of principles that reappeared with the later shift to tidewater cultivation. Controlled flooding was perfected by constructing a separate reservoir and dam to receive freshwater flows from adjacent creeks and streams.(Figure 7) Reservoir water

reached the rice field through a canal that operated by gravity flow.(37) This water delivery system consequently enabled water storage for irrigation and weed control and its delivery on demand to rice fields positioned outside tidal flow. But the inland swamp system could fail in years of high river levels or low rainfall. The shift to tidewater cultivation would eventually represent but a fine tuning of the underlying principles of this inland swamp system.(38)

By the 1720s, the key methods of water and soil management, found in the rice growing systems of West Africa, were evident in the inland swamp systems of South Carolina. The next decade represented an extension and adjustment of these principles to the specific topographic and hydrological conditions of tidal rivers. By the mid-eighteenth century, rice production was steadily shifting to tidal river floodplains in South Carolina and into Georgia, just prior to repeal of the anti-slavery law in 1750.(39) A notice of a land sale by William Swinton of Winyah Bay, South Carolina provides one of the earliest references to the growing emphasis on tidewater production: "…that each [field] contains as much River Swamp, as will make two Fields for 20 Negroes, which is overflow'd with fresh Water, every high Tide, and of Consequence not subject to the Droughts."(40) By 1752 rich Carolina planters were converting inland swamps and tidal marshes along Georgia's Savannah and Ogeechee Rivers to rice fields.(41) The shift to tidewater production accelerated after the American Revolution and remained the basis of the region's economic prominence until the demise of cultivation in the 1920s.(42)

The environment favored for tidewater cultivation was the floodplain adjacent to an estuary where the diurnal variation in sea level resulted in flooding or draining a rice field.(43) Three factors determined where tidewater fields could be constructed: tidal amplitude, saltwater encroachment, and estuary size and shape. A location too near the ocean faced saltwater incursion, while one too far upstream removed a plantation from tidal influence. As in the West African mangrove rice system, a rising

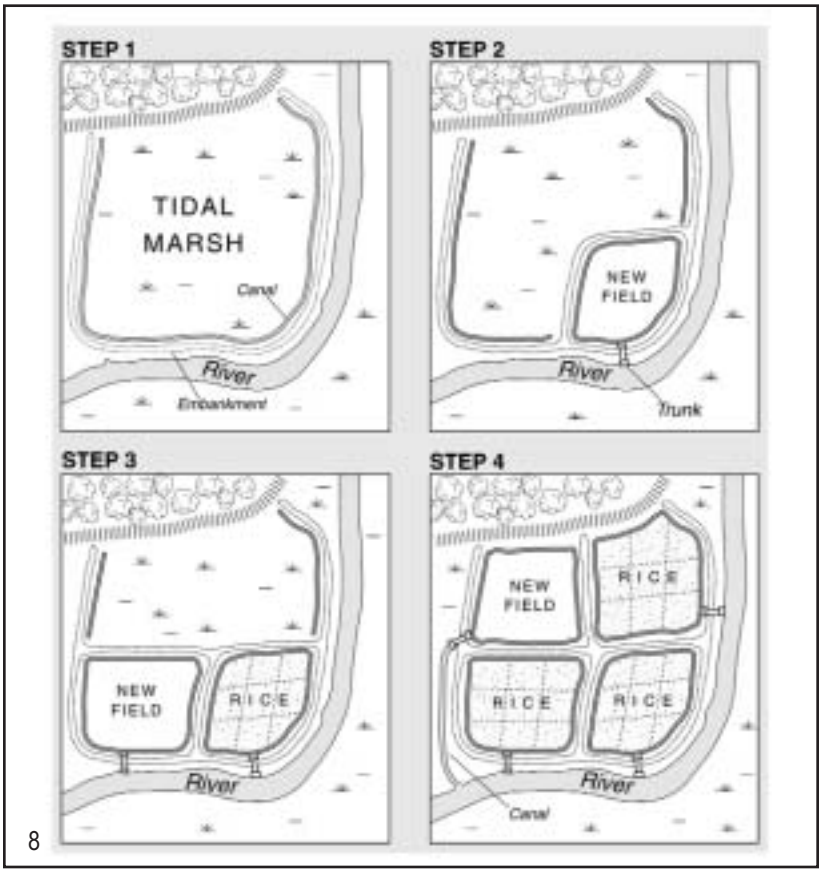

Figure 8. Tidal swamp conversion, South Carolina.

Figure 9. Floodgates on a Carolina tidal plantation, c. 1920. Courtesy: The Charleston Museum.


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tide flooded the fields while a falling tide was used for drainage. Tidal pitch varied between one to three feet—conditions usually found along riverine stretches ten to 35 miles upstream from the river's mouth.(44)

Estuary size and shape also proved important for the location of tidewater plantations for their effect on water mixing and thus salinity. For example, the downstream extension of tidal rice cultivation reflected differences in freshwater dynamics between rivers draining the uplands and those flowing inland from the sea. Since rivers of piedmont origin deliver freshwater within miles of the coast, tidal cultivation could occur within a short distance from the ocean.(see Figure 1) But other tidal rivers are arms of the sea and must reach further inland for freshwater supplies. Along such rivers the freshwater stream flow forms a pronounced layer on top of the heavier saltwater, enabling the former to be tapped for tidal irrigation.(45) The sites suitable for tidal cultivation consequently required skilled manipulation of tidal flows and saline-freshwater interactions to attain high levels of productivity. West African tidal rice farmers had already perfected such practices.

Preparation of a tidal floodplain for rice cultivation followed principles remarkably similar to the West African mangrove rice system (compare Figures 4 and 8). Placed next to a river, the rice field was embanked at sufficient height to prevent tidal spillover. The earth removed in the process resulted in an adjacent canal to irrigate and drain the swamp. Slaves subsequently cleared the dense vegetation for cultivation. The next step involved dividing the area into quarter sections (ten to 30 acres) that were fed by secondary ditches. Sluices built into the embankment and field sections operated as valves for water entry and evacuation much as they do in Africa's mangrove rice system.(Figure 8)

The shift to tidewater cultivation required considerable landscape modification and ever greater numbers of laborers. The near doubling of slave imports into South Carolina from 39,000 to 75,000 between 1750 and 1770 facilitated the transition from inland swamp cultivation.(46) The labor in transforming tidal swamps to rice fields was staggering as historical archaeologist, Leland

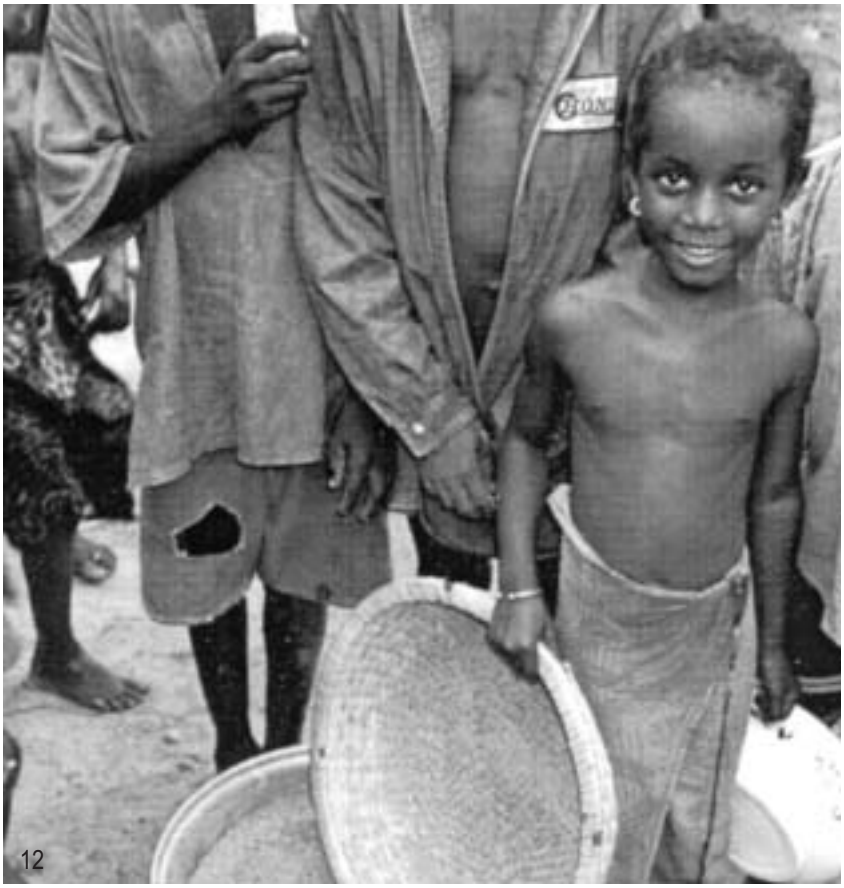

Figure 10. Women milling subsistence rice, Sapelo Island, Georgia, c. 1915. Courtesy: Georgia Department of Archives and History

Figure 11. Rice winnowing with fanner basket, South Carolina, c. 1935. Courtesy: the Charleston Museum.

Figure 12. Mandinka girl with rice winnowing basket, the Gambia. Photo: J. Carney.

Ferguson, vividly captures for South Carolina: "…these fields are surrounded by more than a mile of earthen dikes or 'banks' as they were called. Built by slaves, these banks…were taller than a person and up to 15 feet wide. By the turn of the eighteenth century, rice banks on the 12 1/2 mile stretch of the East Branch of Cooper River measured more than 55 miles long and contained more than 6.4 million cubic feet of earth…This means that…working in the water and muck with no more than shovels, hoes, and baskets…by 1850 Carolina slaves…on [tidal] plantations like Middleburg throughout the rice growing district had built a system of banks and canals…nearly three times the volume of Cheops, the world's largest pyramid."(47)

The tidewater plantation continued to make considerable demands on slave labor for maintaining the earthen infrastructure even if it reduced the labor demands for weeding. With full water control from an adjacent tidal river, the rice field could be flooded on demand for irrigation and weeding, and renewed annually by alluvial deposits. The historian, Lewis Gray, underscored the significance of tidal flow for irrigation, as well as weeding, in explaining the shift from rudimentary inland swamp systems to tidewater cultivation: "Only two flowings were employed as contrasted with the later period when systematic flowings came to be largely employed for destroying weeds, a process which is said to have doubled the average area cultivated per laborer…The later introduction of water culture [tidal] consisted in the development of methods making possible a greater degree of reliance than formerly on systematic raising and lowering of the water."(48) A slave was consequently able to manage five acres instead of the two typically assigned with inland rice cultivation.(49)

The systematic lifting and lowering of water was achieved by the sluices, located in the field's embankment and secondary dikes.(Figure 9) Sluices eventually assumed the form of hanging floodgates, but retained the nomenclature, "trunk", by Carolina planters. The continued use of the term through the antebellum period suggests that the technological expertise of Africans indeed proved crucial for establishing rice cultivation in an earlier era. During

the antebellum period trunks had become large floodgates that were buried in the embankment at a level above the usual low tide mark. Doors (gates) were positioned at both ends, which by pulling up or loosening would be allowed to swing. The inner doors would open in response to river pressure as it flowed through the raised outer door, and then close with receding waters. Field draining reversed the arrangement with the inner door raised and the outer door allowed to swing while water pressure in the field forced the door open at low tide.(50)

Curiosity over the origin of the term, trunk, for sluices or floodgates led one planter descendant, David Doar, to inadvertently stumble upon likely technology transfer from West Africa:

> For years the origin of this name bothered me. I asked every old planter I knew, but no one could enlighten me. One day a friend of mine who planted on one of the lowest places…said to me with a smiling face: "I have solved that little trunk question. In putting down another one, I unearthed the granddaddy of plug trunks made long before I was born." It was simply a hollow cypress log with a large hole from top to bottom. When it was to be stopped up a large plug was put in tightly and it acted on the same principle as a wooden spigot to a beer key.(51)

The earliest sluice system in South Carolina looked and functioned exactly like its African Counterpart.(see Figure 5)

African antecedents to Carolina rice culture are also evident in the use of the African mortar and pestle for husking and polishing the grain, which was accomplished by hand until it was mechanized on the eve of the American Revolution. The mortar and pestle used for milling rice continued among freed blacks for subsistence needs into the twentieth century.(Figure 10) Dale Rosengarten's historical research on basket origins in the lowcountry, moreover, indicates the prototypical one employed for winnowing derives from the Senegambian area of West Africa, where oval coiled baskets are still used to accomplish the task.(52) Figures 11 and 12 illustrate these winnowing baskets respectively in South Carolina during the 1930s and in contemporary Gambia. From cultivation to processing, the historical reconstruction of rice culture in South Carolina and Georgia resonates with linkages to Africa.

Conclusion

While the view of Africans as contributing little more than labor to the rice plantation system of South Carolina and Georgia has given way to recognizing their pre-existing skills and expertise in cultivation, debate still rages over the role of slaves in technology transfer. The cross-cultural and spatial perspective presented in this paper suggests that African-born slaves indeed provided critical expertise and technological know-how in the evolution of the rice cultivation system of South Carolina and Georgia. Evidence from the first 50 years of settlement in South Carolina suggests that technological development and innovation in the rice economy was the product of both African and European knowledge systems. These knowledge systems and their respective technological and agronomic heritages combined in new ways to shape rice cultivation along the Atlantic seaboard. The African contribution to rice development in South Carolina and Georgia should be featured as part of interpretive materials to educate the general public who visit historical parks created from former rice plantations.

Notes

1. Albert Virgil House, *Planter Management and Capitalism in Ante-Bellum Georgia* (New York: Columbia University Press, 1954); James Clifton, "Golden Grains of White: Rice Planting on the Lower Cape Fear," in *The North Carolina Historical Review* 50(1973): 365-393; Pat Morgan, "A Study of Tide Lands and Impoundments within a Three River Delta System—The South Edisto, Ashepoo, and Cumbahee Rivers of South Carolina," (masters thesis, University of South Carolina, 1974); Charles Gresham and Donal D. Hook, "Rice Fields of South Carolina: A Resource Inventory and Management Policy Evaluation," in *Coastal Zone Management Journal* 9(1982): 183-203; Julia Floyd Smith, *Slavery and Plantation Growth in Antebellum Florida 1821-1860* (Gainesville: University of Florida Press, 1973); idem, *Slavery and Rice Culture in Low Country Georgia 1750-1860* (Knoxville: University of Tennessee Press, 1985); Betty Wood, *Slavery in Colonial Georgia* (Athens: University of Georgia Press, 1984).

2. James Clifton, *Life and Labor on Argyle Island* (Savannah, GA: Beehive Press, 1978).

3. House, *Planter Management and Capitalism,* 23; Douglas C. Wilms, "The Development of Rice Culture in 18th Century Georgia," in *Southeastern Geographer* 12(1972): 45-57; United States Census Office, *Agriculture of the U. S. 1860. 8th Census* (Washington, D.C.: Government Printing Office, 1864).

4. Urlich B. Phillips, *American Negro Slavery* (New York: D. Appleton and Co., 1918); A. S. Salley, "The Introduction of Rice Culture into South Carolina," in *Bulletin of the Historical Commission of South Carolina* 6 (Columbia, SC: State Company, 1919); Ralph Betts Flanders,

Plantation Slavery in Georgia (Chapel Hill: University of North Carolina Press, 1933); David Doar, *Rice and Rice Planting in the South Carolina Low Country* (Charleston, SC: Charleston Museum, 1970[1936]; Duncan Heyward, *Seed from Madagascar* (Chapel Hill: University of North Carolina Press, 1927); Norman Hawley, "The Old Plantation in and Around the Santee Experimental Forest," in *Agricultural History* 23(1949): 86-91.

5. Peter Wood, *Black Majority* (New York: Norton, 1974).

6. Wood, in *Slavery in Colonial Georgia,* 103, also indicates a similar trend for Georgia, noting that three-fourths of the slaves shipped there during the critical period of tidewater rice expansion (1766-1771) originated from West Africa's rice coast. Also see Daniel Littlefield, *Rice and Slaves* (Baton Rouge: Louisiana State University Press, 1981).

7. Roland Portères, "Primary Cradles of Agriculture in the African Continent," in *Papers in African Prehistory,* J. D. Fage and R. A. Oliver, eds. (Cambridge and New York: Cambridge University Press, 1970), 43-58; R. J. McIntosh and S. K. McIntosh, "The Inland Niger Delta before the Empire of Mali: Evidence from Jenne-jeno," in *Journal of African History* 22(1981): 1-22; Jack Harlan, J. De Wet, and A. Stemler, *Origins of African Plant Domestication* (Chicago: Aldine, 1976); R. Charbolin, "Rice in West Africa," in *Food Crops of the Lowland Tropics,* eds. C. L. A. Leakey and J. B. Wills (Oxford: Oxford University Press, 1977), 7-25.

8. Portères, "Primary Cradles of Agriculture"; Harlan, et al, *Origins of African Plant Domestication.*

9. Charles Kovacik and John Winberry, *South Carolina. The Making of a Landscape* (Boulder, CO: Westview, 1987); Timothy Silver, *A New Face on the Countryside* (Cambridge and New York: Cambridge University Press, 1990).

10. F. R. Moorman and N. Van Breeman, *Rice: Soil, Water, Land* (Los Banos, Philippines: International Rice Research Institute, 1978); West African Rice Development Association, "Types of Rice Cultivation in West Africa," in *Occasional Paper* No. 2(1980), Monrovia, Liberia.

11. Paul Richards, *Coping with Hunger* (London: Allen and Unwin, 1986); W. Andriesse and L. O. Fresco, "A Characterization of Rice-Growing Environments in West Africa," in *Agriculture, Ecosystems and Environment* 33(1991): 377-395.

12. Littlefield, *Rice and Slaves;* Joyce Chaplin, *Anxious Pursuit. Agricultural Innovation and Modernity in the Lower South, 1730-1815* (Chapel Hill: University of North Carolina Press, 1993).

13. Littlefield, *Rice and Slaves.*

14. Olga Linares, "From Tidal Swamp to Inland Valley: On the Social Organization of Wet Rice Cultivation among the Diola of Senegal," in *Africa* 5(1981): 557-594; idem, *Power, Prayer and Production* (Cambridge and New York: Cambridge University Press, 1992).

15. The West African tidal rice yields are about the same as that recorded in South Carolina and Georgia during the ante-bellum period: about 1.7-2.2 tons per hectare. Doar, *Rice and Rice Planting,* 18.

16. H. A. R. Gibb, *Ibn Battuta. Travels in Asia and Africa* 1325-1354 (London: Routledge & Kegan Paul, 1969); Graham Connah, *African Civilizations: Precolonial Cities and States in Tropical Africa – An Archaeological Perspective* (Cambridge and New York: Cambridge University Press, 1987).

17. Tadeusz Lewicki, *West African Food in the Middle Ages* (Cambridge and New York: Cambridge University Press, 1974).

18. Gomes Ennes de Azurara, *The Chronicle of the Discovery and Conquest of Guinea,* Vol. II (London: Hakluyt, 1899); G. R. Crone, *The Voyages of Cadamosto* (London: Hakluyt, 1937); Paul Pélissier, *Les Paysans du Sénégal: Les Civilisations Agraires du Cayor a la Casamance* (St. Yrieix: Imprimerie Fabreque, 1966); A. Donelha, *An Account of Sierra Leone and the Rivers of Guinea and Cape Verde* (Lisbon: Junta de Investigacoes Cienticados, 1977).

19. The Gomes observation appears in Th. Monod, R. Mauny, and G. Duval, "De la Première Découverte de la Guinée," in *Récit par Diogo Gomes (Fin XV siècle).* (Bissau, Guinea-Bissau: Centro de Estudos da Guiné Portuguesa, 1959), 42, 66. On the arid conditions over the period c. 1100 to c. 1500 in West Africa, see George Brooks, *Landlords and Strangers: Ecology, Society, and Trade in Western Africa, 1000-1630.* (Boulder, CO.: Westview Press, 1993), 7.

20. Valentim Fernandes, *Description de la Côte Accidentale d'Afrique* (Bissau: Centro de Estudos de Guiné Portuguêsa 1951; Pélissier, *Les Paysans du Sénégal;* Walter Rodney, *A History of the Upper Guinea Coast, 1545-1800* (New York: Monthly Review Press, 1970).

21. Note at the bottom of Figure 6 the drawing of an individual using the kayendo shovel for field preparation. This is still the principal implement utilized in mangrove rice cultivation.

22. Dapper noted: "Those who are hard-working can cultivate three rice-fields in one summer: they sow the first rice on low ground, the second a little higher and the third…on the high ground, each a month after the previous one, in order not to have all the rice ripe at the same time. This is the commonest [sic] practice throughout the country…The first or early rice, sown in low and damp areas…the second, sown on somewhat higher ground…the third, sown on the high ground…." Excerpt drawn from Paul Richards, "Culture & Community Values in the Selection & Maintenance of African Rice," in *Indigenous People and Intellectual Property Rights,* B. L. Turner and S. Brush, eds. (Washington, D.C.: Island Press, 1996), 213, based on a translation from the Dutch of Olfert Dapper's manuscript, *New Description of Africa.*

23. M. Adanson, *A Voyage to Senegal, the Isle of Goree and the River Gambia* (London: Nourse, 1759); Francis Moore, *Travels into the Inland Parts of Africa* (London: Edward Cave, 1738); G. Mollien, *Travels in Africa* (Londone: Sir Richard Phillips & Co., 1820); Mungo Park, *Travels into the Interior of Africa* (London: Eland, 1954[1799]); Pélissier, *Les Paysans du Sénégal.*

24. Rodney, *History of the Upper Guinea Coast;* Thomas Winterbottom, *An Account of the Native Africans in the Neighbourhood of Sierra Leone* (London: C. Whittingham, 1803); Rene Caillié, *Travels through Central Africa to Timbuctoo, and across the Great Desert, to Morocco, Performed in the Years 1824-1828* (London: Colburn & Bentley, 1830).

25. Caillié, *Travels through Central Africa,* 162.

26. Wood, *Black Majority,* 25-26,143.

27. Ibid, 25,57-58.

28. James Clifton, "The Rice Industry in Colonial America," in *Agricultural History* 55(1981); 266-283.

29. Wood, *Black Majority*, 26; Converse Clowse, *Economic Beginnings in Colonial South Carolina* (Columbia: University of South Carolina Press, 1981), 57-58; Clifton, "The Rice Industry in Colonial America," 274.

30. Doar, *Rice and Rice Planting;* Kovacik and Winberry, *South Carolina. The Making of a Landscape;* Judith Carney and Richard Porcher, "Geographies of the Past: Rice, Slaves and Technological Transfer in South Carolina," in *Southeastern Geographer* 33(1993): 127-147; Judith Carney, *Black Rice: The African Origins of Rice Cultivation in the Americas.* Cambridge, MA: Harvard University Press, Spring 2001.

31. John S. Otto, *The Southern Frontiers, 1607-1860* (New York: Greenwood, 1989); Wood, *Black Majority,* 162.

32. Wood, *Black Majority*, 55.

33. Thomas Nairne, "A Letter from South Carolina," in *Selling a New World: Two Colonial South Carolina Promotional Pamphlets,* ed. Jack Greene (Columbia: University of South Carolina Press, 1989[1710], 33-73; Clifton, *Life and Labor on Argyle Island;* Clarence Ver Steeg, *Origins of a Southern Mosaic* (Athens: University of Georgia Press, 1984).

34. Clifton, "The Rice Industry," 275.

35. Hawley, "The Old Plantations."

36. John B. Irving, *A Day on the Cooper River* (Charleston, SC: R. K. Bryan Co., 1969),154.

37. Heyward, *Seeds from Madagascar;* Sam B. Hilliard, "Antebellum Tidewater Rice Culture in South Carolina and Georgia," in *European Settlement and Development in North America: Essays on Geographical Change in Honour and Memory to Andrew Hill Clark,* ed. James Gibson (Toronto: University of Toronto, 1978), 91-115; Richard Porcher, "Rice Culture in South Carolina: A Brief History, The Role of the Huguenots, and Preservation of Its Legacy," in *Transactions of the Huguenot Society of South Carolina* 92(1987): 11-22; David Whitten, "American Rice cultivation, 1680-1980: A Tercentenary Critique," in *Southern Studies* 21(1982): 5-26.

38. Heyward, *Seeds from Madagascar;* also, Hilliard, "Antebellum Tidewater Culture," 99, makes the point that during much of the eighteenth century both inland swamp fields with reservoirs and tidewater rice existed simultaneously and that freshwater reservoirs were common even on plantations situated within or near the tidal zone: "In many cases there must have been a blending of the two types of irrigation, for Solon Robinson observed a tidewater planter on the Cooper River who had '…ponds of fresh water covering 100 acres of upland, which are held in reserve to water the rice fields when the river is too salt'."

39. Wilms, "The Development of Rice Culture," 49.

40. "Advertisement for Tidal Land Sale," January 19, 1738, *South Carolina Gazette* (Charleston: South Carolina Historical Society, n. d.); Clifton, "The Rice Industry," 275-276.

41. Wilms, "The Development of Rice Culture," 49.

42. Clifton, "The Rice Industry," 276.

43. Hilliard, "Antebellum Tidewater Rice Culture," 100.

44. John Drayton, *A View of South Carolina, as Respects her Natural and Civil Conerns* (Spartanburg, SC: The Reprint Co., 1970[1802]), 36; Chaplin, *An Anxious Pursuit,* 231.

45. Hilliard, "Antebellum Tidewater Rice Culture."

46. Otto, *The Southern Frontiers,* 1607-1860, 41.

47. Leland Ferguson, *Uncommon Ground. Archaeology and Early African America, 1650-1800* (Washington, D.C.: Smithsonian Institution, 1992), xxiv-xxv, footnote 3, 147.

48. Lewis Gray, *History of Agriculture in the Southern U. S. to 1860,* 2 vols. (Gloucester, MA: Peter Smith, 1958), 281.

49. R. F. W. Allston, "Essay on Sea Coast Crops." In *De Bow's Review* 16(1854); John Glen, "A Description of South Carolina: Containing Many Curious and Interesting Particulars Relating to the Civil, Natural and Commercial History of That Colony," in *Colonial South Carolina: Two Contemporary Descriptions,* ed. Chapman J. Milling (Columbia: University of South Carolina Press, 1951[1761]), 15: Clifton, "The Rice Industry in Colonial America," 275; Whitten, "American Rice Cultivation," 9-15.

50. House, *Planter Management,* 25.

51. Doar, *Rice and Rice Planting,* 12.

52. Dale Rosengarten, "Social Origins of the African-American Lowcountry Basket" (Ph.D. dissertation, Harvard University, 1997).

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The Memory of Iron: African Technology in the Americas

Candice L. Goucher

Metallic microstructures are complex, yet there is a certain order to them, with a nice balance between order and disorder… Anything complex *must* have had a history, a sequence of changes in its parts.(1)

The history of iron in the New World reveals the complexity, order, and disorder of the American past. For more than 300 years, the iron chains of slavery held together an Atlantic world that interconnected the peoples and destinies of four continents: Africans, Europeans, Asians, and indigenous peoples of the Americas. But the memory of iron unleashed both destructive and creative forces. Iron technology provided not only the chains of slavery, but also the tools of plantation and empire. That technology derived not only from the experience of Europeans, but also non-Europeans. The way in which the transfer of African technology imposed cultural and physical changes on the American landscape is the subject of this paper. Particularly, the technology of African iron helped maintain a set of African-derived cultural values, provided an ideology of resistance, and resulted in distinctive patterns of land and resource use.

African Iron Technology: Ancestors, Spirits, and Steel

Throughout the period of the Atlantic era, making iron remained a charcoal-based technology in which spiritual and material realms were indistinct. Smelting and smithing in West and Central Africa were activities in which men were empowered as leaders and through which objects of empowerment were created by technological performance. The source of that power was not merely linked to the material world. Non-material realms are essential parts of the landscape of iron. Through ritual, iron took on meanings and values that explain its potency for the empowerment of individuals and groups. Iron's potential for transformation gives it a sacred status. For the Yoruba and many other peoples of along the Guinea coast, the qualities of iron are a manifestation of its *ase*—its metaphysical energies. Any time two pieces of iron come together, that is Ogun, the Yoruba warrior deity associated with iron and the embodiment of its powers. Beliefs about Ogun reflect the dual capacity of iron to be both destructive (swords, cutlasses, knives) and beneficial (hoes, axes, and other tools).

For the Yoruba, the sites of smelting and smithing were shrines where Ogun existed. Henry Drewal describes the ritual through which human hands, minds, and voices transform a natural substance into a functional, "living" artifact. Sacrificing a cock and saying invocations at the site of a smelting furnace, the smelter celebrated both the dangers and the success of the operation. Thus, according to Drewal, "through ritual, humans shape, control, and change raw power into socially useful power."(2)

The places of technology and its memory are places linked to ancestors in Africa. Furnaces and smithing sites make reference to ongoing genealogical connections. For example, at the site of Banjeli, Togo, where large-scale iron production once supported hundreds of smelting furnaces, the descendants of smiths and smelters remember the generations of sites where their ancestors smelted.(3) During the 1983 reconstruction of an iron-smelting furnace, the master smelter Tandja Najomba called the ancestors to "come and build this furnace." He removed pieces of the old furnace (what westerners would perceive as an archaeological site), and then incorporated them into the walls of the new, clay structure. Thus the artifact became a "placeholder" in the technological and historical

processes of reconstruction. The furnace he was building would become a living, breathing female body, invoked by the smelter to "give birth to good iron."

How smiths and smelters in African societies remembered technological processes is as important to the issues of place and cultural memory as it is to the diffusion of technology. Iron technology was a performed activity in which highly ritualized bodily practices persisted across generations. These practices were transmitted using systems of apprenticeship and restricted access to technology. Activities were controlled by the ancestors and spirits, and they communicated essential values and concerns common to the larger group. According to Terry Childs, "these messages were sent not only to the living, but to the spirit worlds as well."(4) Smiths and smelters used rituals to remember sequences of actions in the complex technical processes of transforming stone to metal, and shackle to spear. In this way, the Yoruba warrior deity of iron, Ogun, accumulated a disproportionate amount of power during the Atlantic era—an era, in turn, characterized by such transformations. The links between historical memory and technological performance provided the meaning and the impetus for action in the Atlantic world.

Technological style best expresses the design decisions and processes, as well as products, of African metallurgists. Over time, these decisions and behaviors acquired patterns because they were of fundamental importance in communicating aspects of culture. Remembering the embedded cultural components of iron technology also explains the role of blacksmiths in major historical changes. During the Atlantic era, iron imports gradually replaced local production. This was usually not because the European products were superior. Rather, substitutions were rarely ones of high quality iron in exchange for inferior products. Despite the myth of the backwardness of African technology, African industries often competed successfully with European imports, and blacksmiths were often astute and ambitious entrepreneurs. But African industries were charcoal dependent, and access to preferred sources of fuel was severely restricted by colonial control over the landscape, and by the patterns of use over centuries that had depleted available ore and preferred species of trees used in charcoal production.

Across the African continent, complex systems of iron production still provided weapons for war, agricultural implements and tools, currencies, and culturally relevant prestige objects, and offered their practitioners a potent stage for social, political, and economic interactions. Products ranged from mild carbon steel to wrought iron. Smiths and master smelters successfully utilized imports of a staggering variety of quality and composition. They also sustained industries that were totally self-sufficient, thus allowing periods and conditions of resistance to the European forces of underdevelopment. During the creation of the African Diaspora, these industrial activities translated African-derived values onto the American landscape as blacksmiths, ironworkers, and charcoal makers peopled a new continent. Not only their labor, but also their ideologies spread from West and Central Africa through the Diaspora.

The Transfer of African Iron Technology

Africans and Europeans alike transferred their technology and other cultural expertise across the Atlantic during the era of the slave trade. They did so in an era in which iron ruled the seas. Even before iron-clad hulls and steamships, the spirit of Ogun was onboard West Indian sailing ships. Aside from the necessary tools on voyages, every ship had a blacksmith among its specialist craftsmen, and he was often among the highest paid. The ship's ironwork "required the constant attention of the skilled craftsmen who comprised much of her crew." Between 1728 and 1738, the British technological developments that produced rolled sheet iron, bars, and rods used improved refractory furnaces and a forced air blast. Eighteenth century slaving ships carried cargoes of iron and iron slag, the waste-product of smelting, was then a common ballast.(5)

Once steam powered the great sailing ships, there was no doubt of Ogun's presence. Coal-fired steam power required a fireman or stoker to feed around five tons of coal a day into the ship's fiery furnace. On large vessels at the turn of the last century, about 185 firemen and 100 trimmers, who carried the coal from bunkers, could be employed in a single voyage. Africans were particularly sought for employment on navy ships "in cutting firewood for use in lighting fires, in the engine room and galley, and for distilling purposes." Their participation is recorded in popular sea shanties, in rituals onboard ships, and in the sailor bands found in carnival ashore—from Bahia to Port-of-Spain.(6) In such performance art, the African stoker is portrayed by a costumed dance originally associated with spirit

possession dances of Ogun's devotees. Moreover, this significant level of African participation carried over on to land.

One of the interesting features of iron technology in the Americas is that it remained charcoal-based. In England, and most of Europe, charcoal iron had been systematically abandoned, owing to the scarcity of fuel. In most industries, charcoal had been replaced by bituminous coal. The availability of hardwoods in the Caribbean and the Americas encouraged colonizers to sometimes revert to wood charcoal processes. Africans, both males and females, were sought out for their expertise in the distillation of wood for fuel.(7) At Clifton Forge in Virginia, where a finery converted pig iron to bar iron in 1831, 32 slaves were employed to make charcoal.(8)

Many opportunities existed for the technologies of the Atlantic rim to interact. The exploitation of African metallurgical expertise that had begun onboard the ships that plied the Atlantic world carried over to the industries of the Americas. African labor was commonly required by large-scale smelting and refining operations. But the African component provided more than just slave labor; Africans were sought for their skills and knowledge. Slave smiths worked in fineries, operated hammers, and participated in the management and operation of smelting furnaces. They did so often against the prevailing racial codes, like the ones encountered by John England at Precipio ironworks, where: "all the [a]rguments yet could be used could not prevail with the Gloucestershire finers to admit of a clause to teach Negroes."(9) Yet, within a few decades blacks did work at the very same operations as finers, founders, bloomers, and foundrymen. That they succeeded against prevailing attitudes underscores the value of their contributions.

Once iron technology reached the rural agricultural communities, the demand for ironworking and blacksmithing skills increased. Shoeing horses and repair of hoes, cutlasses, and other tools were two aspects of demand that linked urban markets with rural communities. As Colleen Kriger has demonstrated for nineteenth century Central Africa, ironworkers were particularly adept in reconfiguring social and ethnic identities in this era of great economic upheaval.(10) They did so by negotiating their skills and products across existing spatial and social boundaries. These same skills were put to use in the New World.

Not surprisingly, the slave ironworkers, such as those of Winkle Village, Guyana, were positioned to go on strike for better wages and to negotiate their early emancipation in 1821. Afro-Jamaican metallurgists in the late eighteenth century similarly found ways to use their expertise to negotiate social status. At the site of Reeder's Pen, nearly three hundred African workers provided expertise for the iron and brass foundry site that was established near the Royal Navy's most important island harbor. There they worked iron in a rolling and slitting mill, did casting, and carried out a variety of smithing enterprises. Plans were underway for the construction of a smelting furnace, and for the cutting of local woods for charcoal fuel, suggesting the desirability of greater autonomy, vis-a-vis the sources of pig iron. But this was not to be. Local colonial authorities dismantled and destroyed the industry, in fear of its capture by an invasion of foreign troops. Throughout the following century, the iron and foundry workers, and their descendants, in Morant Bay, Jamaica, provided a constant source of resistance and rebellion after the demise of the industry there.

Changes in the Landscape of the Americas

Iron-working practices required access to water and forests, as well as to sources of ore and metal. Furthermore, furnaces built to serve either African or European enterprises regularly required specialized sources of mud or clay, plus other resources like lime, for their construction and maintenance. While essential to the maintenance and defense of communities, smithing and smelting operations also contributed to pollution, and to the processes of deforestation, wherever they were carried out.

Locating the historic sites of African technological contributions necessarily involves not only archival research, but also the active participation of archaeologists, and other specialists, trained in the recovery of African-related habitation, and industrial remains. African slave and free communities typically resided in small wooden, or mud structures arranged around a common courtyard area, in which most of the daily activities took place outdoors. Work sites were most often of the edges of habitation sites, sometimes a 15-20 minute walk, usually near a stream or other water source. The sites of iron-working are most easily identified, not by the confluence of available resources, but rather by the almost indestructible evidence of iron working in the form of slag, the unwanted byproduct of smelting or smithing. The presence of African metallurgist can further be identified by caches of empowerment objects, intentionally buried or placed in a smithy hearth, furnace, or near a smithing site.

Charcoal production undoubtedly had the greatest impact on the landscape prior to the use of coal in American industries. Charcoal fuel required dense hardwood, which was long burning,

could achieve high temperatures (up to 1400º C), and contributed to the smelt important high silica and alkali contents. Even the selected cutting of hardwoods quickly deforested the areas surrounding iron-working sites. Evidence from African industrial sites suggests a regional rate of 18,000 trees were lost annually by each specialist community. Catchment areas were limited by the walking distance across which sacks or basket loads of charcoal could be hauled, without an excessive loss of charcoal pieces to dust. In West Africa, this distance was about 25 kilometers. The regional development of charcoal production and long distance trade networks would have followed the initial deforestation.

Forests provided more than fuel for industry, raw materials for building, medicines, and firewood for household use. In areas where cutting was actually controlled by Africans or their descendants, a common practice was to create a sacred forest, in order to preserve a place in which the living could interact with spirits and ancestors. Trees within West African sacred forests were controlled by the chief, king, or clan leader. Protected by traditional sanctions, these trees were never cut—even in colonial periods.

African Blacksmiths: Iron as Master and Slave

Conceptually, the meanings associated with iron provided a contradictory consciousness that pervaded life in the colonies. Iron was both master and slave. That is, the role of iron technology was perceived by all to be a force that supported and maintained the status quo: slave society. Thus, iron was central to life onboard slave ships. Iron was used on ships for the transport of slaves, for weapons used in enslavement, slave shackles, chains, and implements of cruelty and torture, as well as for tools supporting economic enterprises essential to the functioning of slave society.

Yet, iron also played a role in resistance. Slaves used the meaning of iron to develop a basis for their own psychological freedom and empowerment. Maroon societies were established throughout the Americas, using African cultural beliefs and technological expertise. The contradictions embodied by Ogun's duality were especially apparent in slave societies and on plantations, but they would shape the attitudes about African technology's place in the American landscape.

Notes

1. Cyril Stanley Smith, "The Interpretation of Microstructures of Metallic Artifacts," in *Application of Science in Examination of Works of Art* (Boston: Boston Museum Publications, 1965), 20.

2. Henry John Drewal, "Yoruba Body Artists and Their Deity Ogun," in *Africa's Ogun: Old World and New,* Sandra T. Barnes, ed. (Bloomington and Indianapolis: Indiana University Press, 1989), 243.

3. Candice L. Goucher and Eugenia Herbert, "Gender and Technology in African Ironmaking," in *The Culture of African Iron Production,* Peter Schmidt, editor (Gainesville: University of Florida Press, 1996). See the video by Candice Goucher, Eugenia Herbert, and Carlyn Saltman, *Blooms of Banjeli: Technology and Gender in West African Iron-Making* (Watertown, MA: Documentary Educational Resources, 1986).

4. S. Terry Childs, "Style, Technology, and Iron Smelting Furnaces in Bantu-Speaking Africa," in *Journal of Anthropological Archaeology* 10(1991): 353.

5. The streets of Old San Juan, Puerto Rico, as an example, are paved with the blueish-green silica slags.

6. Candice L. Goucher, "Stoking the Furnace, Sailing the Seas: Sailor Bands in Trinidad Carnival" (paper presented at the Atlantic Rim Performance Art Panel, Twelfth Triennial Symposium of the Arts Council of the African Studies Association, St. Thomas, VI, April 25-29, 2001).

7. Idem, personal communication with Walter Landgraf, Stone Museum, CT, May 8, 2000.

8. Reported in Robert B. Gordon, *American Iron, 1607-1900* (Baltimore and London: Johns Hopkins University Press, 1996), 34.

9. Gordon, *American Iron, 1607-1900,* 118.

10. Colleen E. Kriger, *Pride of Men: Ironworking in 19th Century West Central Africa* (Portsmouth, NH: Heinemann, 1900).

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Bounded Yards and Fluid Boundaries: Landscapes of Slavery at Poplar Forest

Barbara J. Heath

In the spring of 1798, Thomas Jefferson's son-in-law informed him that several slaves had planted tobacco on his Albemarle County property without his permission. Randolph's refusal to let them raise it, and insistence that they grow something sanctioned by Jefferson in its place indicates that this tobacco was being cultivated on their allotted grounds, in their own time, and for their own profit. Jefferson's response to this entrepreneurial spirit was unambiguous.

> …I thank you for putting an end to the cultivation of tobacco as the peculium of the negroes. I have ever found it necessary to confine them to such articles as are not raised on the farm. There is no other way of drawing a line between what is theirs & mine….(1)

This exchange hints at the "after hours" activities of enslaved people living on plantations throughout Virginia and the limits placed upon them by slaveholders. While assigned tasks were often explicitly described in the historic record, activities that slaves organized and undertook for their own benefit and in their own time are often difficult to trace. Nevertheless hunting and gathering attest to an intimate understanding of the natural landscape, while through gardening people consciously shaped the land for ends that stood outside of an owner's control. Market gardening and poultry raising, perhaps more directly tied to the dominant plantation regimen, reveal how slaves used agriculture for their own purposes, and how they organized their labor to do so. Together, these economic actions, coupled with kinship networks and the mandatory requirements of servitude, combined to extend their world far beyond the plantation boundaries.

The consideration of a variety of evidence—archaeological traces of houses and yards, preserved fragments of seeds, artifacts, slave censuses, runaway advertisements, store accounts, and letters—is essential in reconstructing how one group of enslaved African Americans shaped the landscapes they inhabited.

By the time Thomas Jefferson was 31 years old, he held 187 men, women, and children in bondage. Although the population fluctuated over time with births, deaths, sales, and purchases, he remained one of the largest slave owners in central Virginia throughout his life. The number of individuals living at his Poplar Forest plantation ranged from a low of 27 in 1774 to a high of 94 in 1819. During this time, they created a community of extended, multi-generational families, tied by bonds of blood and friendship to the Monticello enslaved community and to a broader community spread across the region.(2)

African Americans living at Poplar Forest were, for the most part, two or more generations removed from the Old World. Clearly the social upheaval of the Middle Passage, institutionalized slavery, and the Anglo-American culture of the slaveholding class were important factors in the development of a creole culture. Equally important was the physical reality of the place. As Americans, they experienced climate, topography, and environmental factors quite different from those of their African ancestors. Together, these cultural and natural factors influenced the ways in which people reacted to and shaped the landscape around them.

Here, the term landscape is used in two ways. First, it refers to the physical result of the continuing interaction between people and nature. Second, landscape describes the real and perceived boundaries that limited one's experience of the world. Institutionalized slavery provided the overarching framework for these boundaries, but the network of

social and economic connections that individuals created could stretch or tighten these limits.

West Africans in Virginia

In discussing the identity of Poplar Forest slaves, it is important to outline the assumptions used concerning the origins of Africans brought to Virginia as slaves. The fragmentary and inexact nature of the source material has led scholars to disagree about the ethnicities and absolute numbers of individuals transported. However, most scholars believe that the majority of slaves imported into Virginia during the colonial period came from West Africa, with the largest numbers dominated by the Igbo cultural group from the region surrounding the Bight of Biafra. Akan-speakers from the Gold Coast made up the next largest proportion of transported Africans, followed by Senegambians.(3)

Clues about the origins of Jefferson's slaves survive in legal documents and in naming practices carried out within their community. Jefferson inherited the majority of his bondspeople from his father-in-law John Wayles, a large planter and entrepreneur who engaged in the transatlantic slave trade. The extent of Wayles's participation is unclear; however debts he incurred continued to plague his son-in-law nearly 25 years after his death.(4) It is possible that some of the men and women he held in bondage, and who Jefferson subsequently inherited, were transported by Wayles.

Slaves from 11 quarter farms, including "Guinea" and "Angola," made up the Wayles' legacy. Oral histories, the recorded ages of a few individuals and naming practices suggest direct ties to Africa. Akan day names survive alongside others suggestive of Fanti or Igbo origins in the slave censuses Jefferson kept. Many men and women had names suggestive of origins in the Spanish or Portuguese-speaking world.(5) Further analysis of family connections and naming practices is needed to determine the extent to which West African or Caribbean naming practices persisted within families through time.

Agricultural Traditions

Enslaved West Africans and their descendants formed the backbone of the tobacco and wheat-based plantation economies of colonial and antebellum Virginia. They came from regions with economies based on the cultivation of grains like millet and sorghum, root crops of yams and cocoyams, and starchy fruits like bananas and plantains. Agriculturists from Senegal to the Bight also commonly grew legumes, fruits, and bulbs. Maize, cassava, and tobacco from the New World reached West Africa beginning in the late fifteenth century and became important crops throughout the region.(6) Farmers made crop choices based primarily on the amount and dependability of rainfall. Grains that could be planted and harvested in fairly dry conditions predominated in the northern interior regions, while root crops were the staple foodstuffs of the south. Although some groups engaged in irrigated farming for rice, tree farming, and shifting cultivation in the region, West African farmers principally practiced rotational bush fallow in both the savanna and forest.(7)

In some societies, the care of individual crops was divided along gender lines, while in others work was divided by task rather than product, with men involved in clearing and tilling virgin land, and women employed in planting, tending and harvesting.(8) Farmers planted fields for periods ranging from three to six years, employing a variety of strategies to stretch fertility and yield. They planted multiple crops within the same plot, a strategy that served the dual function of discouraging weed growth and erosion and protecting their harvest if one crop should fail. Where rainfall allowed, farmers planted crops in succession to ensure a constant supply of food. Finally, they rotated plantings within each plot to slow down the depletion of nutrients in the soil. After several years of heavy cultivation, land was allowed to lie fallow and regenerate for four to ten years before planting resumed. In some areas, farmers planted fallow fields with carefully selected cover crops; in others they allowed fields to regenerate naturally, only intervening to prevent the regrowth of trees.(9)

Rotational bush fallow shared some important characteristics with Virginia land-use patterns of the late eighteenth and early nineteenth centuries. Cycles of land clearance, use, and abandonment characterized tobacco cultivation for much of the Chesapeake, with Indian corn or wheat often replacing tobacco before fields were completely exhausted.(10) By the late eighteenth century, Jefferson and many of his contemporaries used strategies such as crop rotation, selected cover crops for soil regeneration, and intercropping to boost yields.(11) While the context of these practices may have differed between landowners and enslaved workers, the practices themselves would certainly have been familiar to West African farmers.

West Africans and Virginians also shared elements of farming technology. Hoes were an important tool on both sides of the Atlantic, and Africans most likely found the transition from digging sticks and machetes to dibbles and cuttoes an easy one.(12) Thus, while enslaved farmers in Virginia did not nec-

essarily introduce new agricultural methods to North America, their familiarity with the technology, crops, and land use patterns current in colonial Virginia made the transition from Old World to New an efficient one from the perspective of their owners.(13)

The Poplar Forest Landscape

The Poplar Forest landscape from the 1770s through the 1820s consisted of a changing mosaic of woodlands, farm fields, meadows, and waste grounds divided into quarter farms and punctuated by dispersed settlements. Networks of roads and footpaths connected these settlements, defined by an overseer's house, slave quarters, barns, and other outbuildings. Shared resources such as a blacksmith's shop, a tobacco prizing barn, and a grain threshing barn stood roughly equidistant to living quarters and convenient to public roads. Tobacco drying barns, cowsheds, and other farm structures adjoined fields and pastures within each quarter farm.(14)

Enslaved African Americans shaped fields and forests at Poplar Forest during their working hours to fulfill a variety of tasks. In their private time, they continued to alter this landscape to meet their own needs. Archaeological investigations of two sites—the North Hill and the Quarter—provide some important clues about after hours activities. Both slave quarters were associated with the "old plantation" complex nestled between the branches of the Tomahawk Creek near the center of the Poplar Forest tract. There, men constructed houses on the margins of eroded fields, a strategy perhaps mandated by overseers to ensure that the most productive land remained in cultivation.

Archaeologists discovered the remains of a subfloor pit at the North Hill. Such features are rectangular compartments set beneath cabin floors that slaves used for storing foodstuffs and other belongings. Artifacts found in the fill of the pit indicate that this dwelling was abandoned sometime before the mid-1780s. An erosion gully cut across the hillside southwest of the cabin, and residents filled it with trash in the final quarter of the eighteenth century. The fill of the gully was cut by the line of a palisade fence that formed a substantial enclosure. It is probably associated with another cabin located outside of the excavation area and dating to a slightly later period.

The Quarter was occupied between 1790 and 1812. Members of at least three households lived at the site. Their log houses aligned roughly southwest to northeast, but did not form part of a rigidly defined slave row. The cabins were bounded on the south by a possible garden enclosure, and on the north by work yards. One yard was enclosed and shared by the occupants of two of the dwellings.(15) The most intensively used areas of the site appear to be the northern yards that were sheltered from the surveillance of the overseer, whose house was located behind the cabins on the crest of the hill.(16)

Floral and faunal data from both sites provide important insights into the ways that residents exploited the surrounding landscape. Seeds and bones preserve evidence of foraging and possible gardening activities as well as hunting, trapping, and fishing, pointing to the development of distinctly African-American foodways.(17)

Some carbonized remains, such as corn kernels or sunflower seeds, represent food that was directly consumed. Others represent what slaves discarded after they used the leaves, stems, or roots of the plant. Evidence of at least 35 species was recovered at the North Hill. These included seven fruits, eight vegetables and grains, two to three nuts, nine edible herbs, four weeds, three grasses, one ornamental and one condiment.(18) Of these, nearly three-quarters represent domesticates. These may have arrived at the quarter in the form of provisions, or slaves may have raised them in kitchen gardens or allotted plots. Slightly more than one quarter of the plant remains represent native fruits, nuts and edible and medicinal herbs—species that clearly fell outside of the plantation provisioning system.

The subfloor pit in the North Hill cabin was particularly rich in carbonized floral remains, yielding nearly all of the grains and edible weeds, and just under half of the fruits. The erosion gully contained small quantities of grains and edible weeds, and half of the fruit seeds and pits.(19)

The variety of identified floral types recovered at the Quarter Site was less rich, consisting of only 15 species. These included six fruits, four vegetables and grains, two nuts, and three edible herbs. Most plant remains were associated with the fill of a single subfloor pit in one of the cabins.(20)

While the majority of plant remains identified at the Quarter Site to date represent domesticated species, just over 20% are gathered, native plants, including nuts, edible herbs, and native wild species. The proportion of domesticates to wild species is somewhat lower than that of the North Hill, but it nonetheless indicates the continuing importance of foraging.

How did slaves know which plants were valuable to gather? In discussing the transfer of African knowledge to the Caribbean landscape, anthropologist Merrick Posnansky has noted that plants from the same families were used in similar ways on both sides of the Atlantic.

> This does not mean that West Africans were necessarily the first to utilize such plants in the Caribbean, but it does mean that they were able to assimilate the knowledge of their Indian predecessors rapidly, grasp the potentialities of the plants on or near the plantation, and integrate this new information with their own considerable knowledge of plants and the pharmacopoeia of the obeah men and women.(21)

The similarities of usage between some native herbs on Jamaica and in the American South suggests such a transfer occurred in Virginia as well.(22)

All of these native plants grew in areas readily accessible to enslaved residents foraging within the plantation landscape. Many grew in open fields, disturbed grounds, and the edge zone separating forest from field. Others, like acorns and hickory nuts, could be collected in forested areas. Black walnut was a species valued by Jefferson, and most likely remained easily accessible as a garden tree after 1806 when he began landscaping the grounds around his house. Slaves may have encouraged the growth of fruit and nut trees near their quarters, a practice in keeping with the cultivation of fruit and nut-bearing trees in the Caribbean and West Africa.(23)

The native plants represented by carbonized remains served a variety of nutritional uses. Most could be directly consumed as greens, cooked as potherbs, or harvested for their seeds, which could be parched for cereal or ground for flour.(24) African Americans in the South used violets to make soup, and the plant became known as “wild okra."(25) Fruits could be distilled into alcohol or dried for later use.(26)

African Americans also used these plants, as well as domesticated species, to combat sickness. While Jefferson employed a neighboring physician to tend to the ill or injured, slaves chose to treat themselves or, in cases beyond their skill, to consult a local “negro doctor."(27) Leaves, roots, bark, and even pits held curative properties for a host of maladies.(28) While the use of native fruits and herbs was widespread among both blacks and whites in the South, the combination of plant use with West African beliefs about the causes and cures of sickness and disease formed a distinctly African-American approach to healing. Archaeologists working on other sites occupied by enslaved families and their descendants have discovered similar assemblages of wild plants, suggesting that strategies for approaching illness that developed under slavery continued in the post-Emancipation south.(29)

Enslaved gardeners may have also cultivated several of these plants around their cabins for their aesthetic qualities.(30) While archaeologists have investigated the retention of African traditions of yard sweeping, and scholars have discussed the appearance of yard-art in post-Emancipation settings, little is currently known about the extent to which enslaved peoples modified the landscape for beauty alone.(31) In the end, plants fulfilled multiple functions, and probably were valued for all of their properties.

While it is likely that slaves gathered the edible herbs, medicinal plants, and many of the native fruits in their own time, their source for domesticated plants is less clear. Corn and wheat were staples within the provisioning system. Jefferson’s records of provisions, however, indicate that he customarily allotted these grains as flour rather than raw ears and sheaves.(32) It is unclear to what extent slaves gathered corn, wheat, oats, and rye from plantation fields for their own use, and to what extent they raised these grains in their own plots.

Perhaps more intriguing is the presence of sorghum in the fill of the subfloor pit associated with the North Hill. A staple of the West African diet, the grain was unfamiliar to Jefferson, who called it “guinea corn” when he received a parcel of seeds from his friend James Madison in 1791.(33) Its association with the North Hill indicates that sorghum was in use at least six years prior to his acquaintance with it. This contradiction in evidence suggests that enslaved men and women were cultivating the crop for themselves without Jefferson’s knowledge.

Jefferson made no direct references to providing slaves with land for their own gardening efforts at Poplar Forest.(34) However, he recorded purchases of garden produce and poultry, as well as grass seed, hay, and fodder from enslaved men and women living on his own and neighboring plantations.(35) These activities were widespread throughout the Southeast and the Caribbean. Men tended to provide the majority of garden produce, animal skins, grasses, and fodder, while women provided the bulk of the eggs.(36)

Archaeologists recovered relatively small numbers of animal bones at each site that provide additional clues about residents’ diets and their after-hours engagement in hunting, trapping, and fishing.(37) Pigs provided the staple meat diet at both quarter sites. The predominance of foot, cranial, and long bone fragments indicates that slaves received less meaty portions of the animals that were distributed as part of their pork provisions.(38) Bones from other domesticated species, such as cows and chickens, were found in relatively small numbers.(39)

Faunal analyst Susan Andrews has noted that the highly fragmented mammal bones recovered at the North Hill may be attributed to the theory of the "one-pot meal," which is a method of cooking that is based on African traditions. This would presumably involve the breaking of bones into pieces small enough to fit into a cooking crock so that stews or dishes such as hoppin' john could be prepared.(40)

Wild species made up an additional portion of the slaves' meat diet. They consumed white tailed deer, eastern cottontail rabbits, eastern gray squirrels, opossums, a woodchuck, a raccoon, and a fresh water bass or sunfish.(41) While all of these species are edible, some of the small mammals may also have been hunted for their skins. These could be used at home or sold, traded, or bartered for goods.(42)

No significant variability was observed between the sites, although the North Hill appears to have had more diversity in wild species. Because of the poor preservation of the bones at both sites, it is impossible to establish whether the decline of diversity points to an increased reliance on provisions over time, or whether it simply reflects taphonomic biases.(43)

Archaeologists found lead shot of various weights and gunflints at both sites and a musket frizzen at the North Hill. Together with the variety of wild animals remains present, these artifacts indicate that some enslaved individuals had access to firearms and used them for hunting. Fishing, hunting, and trapping most likely took place during the evenings or on Sundays when slaves were dismissed from plantation labor. While all of the bones found represent animals that likely inhabited the Poplar Forest fields and woodlands, slaves might have had occasion to go further afield to find food.

Poplar Forest Slaves and the Broader Landscape

What do we know about the movement of enslaved men and women at Poplar Forest? While travel was legally restricted to those with permission to do so, boundaries appear to have been less rigid than the law implied. From a relatively early age, Jefferson's slaves knew of and experienced a landscape that extended far beyond the borders of their home plantation. Through a variety of mandatory assignments and voluntary choices, they left the plantation and experienced this wider community. Ties of kinship, economic activities, work assignments, and acts of rebellion, separately or in combination, influenced the frequency and distance of their travel.

Some men and women were separated from family members by "abroad marriages" or sales, and made travel a regular part of their weekly routine to visit spouses, children, and relations. Others left the plantation to pursue economic activities in local shops or markets, or to attend church services.(44) For many Poplar Forest slaves, travel was a part of their assigned work load. Wagoners carried goods to and from Lynchburg and area mills; messengers ran errands throughout the neighborhood.(45) These trips strengthened ties not only between landowners, but also between enslaved workers, who doubtlessly used such opportunities to renew acquaintances with their neighbors.

Because of the close ties between the two plantations, many Poplar Forest slaves traveled to Monticello, extending their knowledge of central Virginia far beyond the bounds of Lynchburg. As assigned by Jefferson and his overseers, they transported goods and livestock, provided labor at key points in the harvest cycle, and served apprenticeships.(46) People also voluntarily traveled between the two plantations to visit family members.(47)

The route, whether followed by wagon or on foot, wound through Buckingham County, fording the James River at Warren before entering Albemarle County for the final push to Monticello. Depending on the roads taken, the journey was between 93 and 116 miles, and could last as long as eight days.(48)

Through these trips, and the stops they entailed, enslaved travelers extended their social and economic networks in important ways. Acquaintances in neighboring counties shared a meal, exchanged news, goods, and services; and created new bonds that might provide shelter for a tired wagon driver or aid a runaway in negotiating hostile territory.

On those occasions when slaves traveled to escape bondage, family ties clearly figured in to where they fled. Runaway advertisements throughout the South are full of comments indicating that husbands sought out wives and sons returned to the plantations of their mothers. As families were broken up by sales, they nevertheless found ways of maintaining connections.(49)

For a small group of enslaved men, and a smaller number of women, the landscape beyond Monticello was also familiar. Watermen, transporting goods from the plantation to market in Richmond, were afforded an uncommon degree of free movement and association. These men likely played vital roles in maintaining family connections and sharing cultural knowledge across the region. Their familiarity with large stretches of territory, and the people that dwelled along the rivers, made them important sources of information for runaways and aided in running away themselves. One Poplar Forest slave, Jame

Hubbard, was "carried upriver" by a waterman. He remained free for a year before being captured in what is now West Virginia.(50)

A few Monticello-based slaves traveled beyond Virginia, serving Jefferson during his residence in Philadelphia, Washington, D.C., and Paris. While these places were far removed from the realities of daily life at Poplar Forest, they nevertheless played some part in the perception of the wider world shared by the men and women that lived there. Hannah, Jefferson's enslaved cook, was a literate woman. The only letter in her hand that survives is signed "Adieu." Exactly how she learned French will never be known, but it is interesting to speculate about the extent to which Jefferson's travels, and those of a few members of the enslaved community, affected the worldview of those who stayed behind.

Conclusions

Drawing on traditions from West Africa and conditions endured in the New World, enslaved men and women formed the backbone of agricultural labor in colonial and antebellum Virginia. While slaveholders ordered plantation landscapes for the production of cash crops, slaves modified and exploited them through foraging, gardening, poultry raising, hunting, and fishing. The landscape that African Americans inhabited at Poplar Forest shaped the rhythms of their working and private lives and formed a starting point for exploring the broader communities of Lynchburg, Bedford County, and beyond. Movement between neighboring plantations, shops, warehouses, and places of worship provided men and women with opportunities to share ideas, foster friendships and family ties, and plan for the future.

Slaves' familiarity with and reliance on the resources of the immediate landscape structured choices of foods and methods of preparing them, guided healing practices, influenced aesthetic preferences, and touched on many other aspects of daily life. These choices, made individually on thousands of plantations throughout the region, were shared and refined by the formal and informal exchanges of travelers. Beyond the boundaries of the plantation lay a world of possibilities: for finding a spouse, earning some money, sharing faith, or finding freedom. Through myriad contacts with the broader world, men and women received, developed, maintained and spread a regional African-American culture.

Notes

1. Edwin Morris Betts, *Thomas Jefferson's Farm Book,* (Charlottesville: The University Press of Virginia, 1987), 268-269.

2. Dumas Malone, *Jefferson the Virginian,* (Boston: Little, Brown and Company, 1948), 21, 31-32; Betts, *Jefferson's Farm Book,* 5-18; Barbara J. Heath, *Hidden Lives, The Archaeology of Slave Life at Thomas Jefferson's Poplar Forest,* (Charlottesville: University Press of Virginia, 1999), 10-13.

3. Donnan puts Angolans ahead of Senegambians, in Philip D. Curtin, *The Atlantic Slave Trade, A Census,* (Madison: The University of Wisconsin Press, 1970), 157; Mechal Sobel, *The World They Made Together, Black and White Values in Eighteenth-Century Virginia,* (Princeton: Princeton University Press, 1987) 6, 244-245; Michael Mullin, *Africa in America, Slave Acculturation and Resistance in the American South and the British Caribbean 1736-1831,* (Urbana: University of Illinois Press, 1994), 24; Michael Gomez, *Exchanging Our Country Marks, The Transformation of African Identities in the Colonial and Antebellum South,* (Chapel Hill: University of North Carolina Press 1998), 150.

4. Wayles was a factor for a group of Bristol merchants whose ship, the 'Prince of Wales,' sailed for the coast of Africa in 1772 and delivered a cargo of 280 slaves to Virginia. Julian P. Boyd, editor, *The Papers of Thomas Jefferson, Volume 15, March 1789-November 1789,* (Princeton: Princeton University Press, 1958), 676-677; James A. Bear and Lucia C. Stanton, editors, "Jefferson's Memorandum Books, Accounts, with Legal Records and Miscellany, 1767-1826," in *The Papers of Thomas Jefferson, Second Series, volumes 1 and 2,* (Princeton: Princeton University Press, 1997), 752.

5. As recalled by her grandson Madison, Betty Hemings was the daughter of an African woman and a white ship's captain. She resided with her six children and grandson at Wayles's Guinea quarter before Jefferson became her owner and moved her family to Monticello in 1774. Betts, *Jefferson's Farm Book,* 9; Annette Gordon Reed, *Thomas Jefferson and Sally Hemings, An American Controversy* (Charlottesville: University Press of Virginia, 1997), 23. The connection to Africa of others owned by Jefferson remains less clear. It is most likely that Squire, Judy and Goliah, all born between 1727 and 1731, were the children or grandchildren of survivors of the Middle Passage, or experienced it themselves.

Cuffey probably was derived from Kofi, Friday. Phoebe and Quash may have come from Efua (Friday), and Kwesi (Sunday), names that were later creolized. There can be no doubt that "black Sall's" son Quomina, who fled

with his mother and siblings to the British during the American Revolution, carried the Akan day name for Saturday (Kwamena). Other names are suggestive of Fanti or Igbo ethnicities: Beck may be derived from 'Beke,' Anthony from the tribal name 'Andoni,' and Jenny from 'Ginneh.' Laurie A. Wilkie, "Continuities in African Naming Practices Among the Slaves of Wade's Green Plantation, North Caicos." *Journal of Bahamas Historical Society* 15(1)(1993), 33-34. Anglicized names like Jack, Joe, and Abby, all common among Jefferson's slaves, may also be derivative of Akan day names. Ibid, 33.

Sanco, Luna, Isabel, Bella, Lucinda, Belinda, and Emanuel bore Hispanic names. The name Dilcy, given to two girls born in the 1760s (one at Shadwell and the other at Poplar Forest), may have been derived from the Spanish word dulce, meaning sweet. Later generations of men and women owned by Jefferson carried on these names, adding Flora, Amanda, Lucinda, Sophia, Melinda, Lania, Maria, Lovila, and Lovilo for children born into the community.

6. A.G. Hopkins, *An Economic History of West Africa* (New York: Columbia University Press, 1973), 30.

7. Hopkins, *An Economic History,* 33-34.

8. S. O. Babalola and Carolyne Dennis, "Returns to Women's Labour in Cash Crops in Nigeria," in *Agriculture, Women and Land, The African Experience,* edited by Jean Davidson (London: Westview Press, 1988), 82; Ifi Amadiume, *Male Daughters, Female Husbands, Gender and Sex in an African Society* (London: Zed Books, 1987), 29, 34; E. Francis White, "Women in West and West-Central Africa," in *Women in Sub-Saharan Africa,* edited by Iris Berger and E. Francis White, (Bloomington: Indiana University Press, 1999), 65; see also Miriam Goheen, "Land and the Household Economy: Women Farmers of the Grassfields Today," in *Agriculture, Women, and Land, the African Experience,* 90-105.

9. Hopkins, *An Economic History,* 33-34.

10. Rhys Isaac, *The Transformation of Virginia 1740-1790,* (Chapel Hill: University of North Carolina Press, 1982), 22-24.

11. At both Poplar Forest and Monticello, corn and peas, and corn and potatoes shared the same fields. Edwin Morris Betts, *Thomas Jefferson's Garden Book,* (Philadelphia: The American Philosophical Society, 1944), 192-194, 517-518; Betts, *Jefferson's Farm Book,* 88, 312-317; Joel Yancey to Jefferson, February 7, 1820, MHi.

12. Hopkins, *An Economic History,* 36.

13. See Hopkins, 36-37, for discussion on why plows were not used in West Africa.

14. Barbara J. Heath, "Rediscovering an Historic Landscape: Archaeology, Documents and GIS at Poplar Forest" (paper presented at the annual meeting of the Society for Historical Archaeology Conference on Historical and Underwater Archaeology, Salt Lake City, UT, 1999).

15. Heath, *Hidden Lives,* 27-46; Barbara J. Heath and Amber Bennett, "'The little Spots allow'd them': The Archaeological Study of African-American Yards," in *Historical Archaeology* 34(2)(2000), 46-47.

16. Heath, *Hidden Lives,* 44. The three cabins excavated at the Quarter are designated Structures 1,2,and 3 in the analysis. Structure 1 measured 15 ft. x 25 ft., was divided into two rooms, contained three subfloor pits, and was raised off the ground on wooden and stone piers. Structure 2 measured 13 ft. square, contained no pits, and had an earthen floor. Structure 3 was badly preserved. It probably measured 18.5 ft. sq., and was raised off the ground on stone piers. It did not contain any subfloor pits, but had an extensive midden beneath it.

17. Leslie Raymer, "Macroplant Remains from the Jefferson's Poplar Forest Slave Quarter: A Study in African American Subsistence Practices," *New South Associates Technical Report* #402(1996), Stone Mountain, GA; idem, "Draft data from the Poplar Forest North Hill," (manuscript on file, Thomas Jefferson's Poplar Forest, Virginia, 2000); Heath, *Hidden Lives,* 59-60; Heath and Bennett, *Historical Archeology,* 46-48.

18. Plant remains from the site include blackberry, elderberry, grape, peach, persimmon, strawberry and sumac (fruits); common bean, maize, oats, rye, sorghum, sunflower, and wheat (vegetables and grains); acorn, hickory and hickory/walnut (nuts); bedstraw, carpetweed, dock, goosefoot, knotweed, pigweed, purslane, smartweed, and vervain (edible herbs); copperleaf, nightshade, prickly mallow, and ragweed (weeds); agropyrn, goosegrass, and an unidentified grass family (grasses); viola (ornamental/edible) and poppy (condiment). Raymer, "Draft data."

19. Raymer, "Draft data." The data break down as follows: 90% of the grain, 46% of the fruit, and 89% of the edible weed assemblages were recovered from the fill of the subfloor pit; 8% of the grain, 50% of the fruit, and 8% of the

edible weed assemblages came from the fill layers in the erosion gully that correspond with the occupation dates of the cabin. The remainder of the carbonized floral materials recovered from the site came from a small pit located just outside of the cabin (less than 2% overall) and the upper layers of gully fill (7%) and small isolated features (less than 2% overall).

20. The data in the following discussion of the Quarter site reflect floral remains from Structures 1 and 2 only. Analysis of Structure 3 is not yet complete, but a preliminary examination indicates no new species present. Floral remains include cherry, grape, huckleberry, peach, persimmon, and raspberry (fruits); common bean, maize, sunflower, and wheat (vegetables and grains); hickory and walnuts (nuts); and bedstraw, goosefoot, and smartweed (edible herbs). Distributions are consistent with the North Hill findings if peaches are excluded from the count. Nearly 73% of fruits, vegetables, and edible and medicinal herbs were recovered from the most intact subfloor pit in Structure 1, while the other two pits contained less than 1% of the assemblage. These features were extremely shallow, however, and it is likely that most of their contents were displaced by plowing. The floor of Structure 2 contained 25% of the edible assemblage excluding peach pits, which made up 79% of the total assemblage from this feature. See Raymer, *New South Technical Report* #402.

21. Merrick Posnansky, "West Africanist Reflections on African-American Archaeology," in *I, Too, Am America: Archaeological Studies of African-American Life,* edited by Theresa Singleton, (Charlottesville: University Press of Virginia, 1999), 32.

22. U. P. Hedrick, editor, *Sturtevant's Edible Plants of the World,* (New York: Dover Publications, Inc., 1972), 43.

23. Heath and Bennett, *Historical Archaeology,* 39-41. Remains of carbonized wood were systematically recovered from the fill of the subfloor pit in the North Hill cabin and the associated erosion gully fill. These were analyzed by Leslie Raymer of New South Associates. In all, 17 identifiable species of trees are represented in the wood charcoal assemblage. The ubiquity (expressed as a percentage of the total number of proveniences in which a given species is present) of such as walnut, sycamore, hophornbeam, elm/hackberry, dogwood, black locust, beech, basswood, ash, hickory, oak, and pine indicates that at this time, much of the land surrounding the cabin site was covered in hardwood forest, and had not been cleared for cultivation. Carbonized oak made up nearly 40% of all the charcoal recovered at the site, followed by hickory (7%), and beech (4%), suggesting that site residents preferred these woods with oak the clear favorite.

Charcoal samples recovered from the Quarter site indicate that by the first decade of the nineteenth century, the landscape around the "old plantation" had changed dramatically. The number of identifiable species recovered from features associated with two of the cabins shrank to three (hickory, oak, pine), with pine predominating. These are consistent with the regeneration of secondary growth in abandoned fields.

24. The young leaves of goosefoot, dock, nightshade, pigweed, and purslane were eaten as greens or cooked as potherbs, comparable in taste to spinach and asparagus. Dock, goosefoot, pigweed, purslane, and smartweed seeds provided flour or cereal. Hedrick, *Sturtevant's,* 43-44, 450-451, 512-514, 544; Leslie Raymer, "Macroplant Remains from Six Nineteenth-Century Cabins at the Hermitage, Tennessee: A Study of Antebellum and Early Emancipation Era African American Subsistence Patterns," in *New South Associates Technical Report* #376 (1997), Stone Mountain GA, 39-40, 42-44.

25. Hedrick, *Sturtevant's,* 598.

26. Ibid, 244, 522. Jefferson reported on the abundance of the peach harvests at Poplar Forest, noting that enslaved women dried and processed the fruits in a variety of ways. Peaches, persimmons, blackberries, grapes, and elderberries could be distilled for wine, beer, or spirits. See also Betts, *Jefferson's Garden Book,* 517-518; Joel Yancey to Jefferson, November 19, 1819, MHi.

27. Joel Yancey to Jefferson, April 10, 1819, MHi; Joel Yancey to Jefferson, July 1, 1819, MHi; see also Thomas M. Randolph to Jefferson, April 25, 1800, ViU.

28. Sumac cured worms, sores, yaws, and burns. See Pamela Forey and Ruth Lindsay, *An Instant Guide to Medicinal Plants* (New York: Gramercy Books, 1991), 101; Kay K. Moss, *Southern Folk Medicine 1750-1820* (Columbia: University of South Carolina, 1999), 77, 101, 104, 110, 132, 207. Raspberries, strawberries, blackberries, and persimmons served for kidney or bladder complaints, "looseness of the belly," and sores. Persimmon fruit was valued for its astringent qualities, and used to clean wounds. Virtually all parts of the peach served some curative purpose: the leaves and flowers acted as a purgative or, made into a poultice, diminished swelling; the stones aided sore throat and pain in the side. Flowers, roots, leaves, and bark of elderberry trees eased swelling, snakebite, toothache, burns, and the symptoms of

a skin irritation known as scald head. Taken internally, they could be used as a purgative, diuretic or emetic. See Moss, *Southern Folk Medicine,* 173, 182, 198, 199, 207.

Edible herbs also possessed medicinal qualities. Infusions of knotweed, smartweed, or pigweed stopped bleeding from ulcers, sores, piles, and relieved menstrual pain. See Forey and Lindsay, *Instant Guide to Medicinal Plants,* 23; Raymer, *New South Technical Report* #376, 40, 43; see also Betts, *Jefferson's Garden Book,* 644. Knotweed tea dispelled kidney stones, while bedstraw relieved throat and chest inflammations, and disorders of the kidneys. Moss, *Southern Folk Medicine,* 58, 94. Purslane was also known to have astringent properties, while the value of dock was in its ability to treat skin conditions, leprosy, venereal disease, and tumors. It also served as a laxative and blood purifier. See Raymer, *New South Technical Report* #376, 44; see also Moss, *Southern Folk Medicine,* 181.

The presence of jimsonweed at the North Hill hints at the possibility of its use medicinally. While all parts of the plant are poisonous, the seeds are especially toxic. Nevertheless, eighteenth and nineteenth century healers put it in salves and poultices to treat a variety of skin conditions. Its most important use, however, was in treating spasmodic coughing associated with asthma. The plant was burned and the smoke inhaled to relieve symptoms. See Raymer, *New South Technical Report* #376, 47; see also Betts, *Jefferson's Garden Book,* 644.

Jefferson also included malvaceae in his listing of medicinal plants native to Virginia (sida rhombifolia and sida abutilon), and a prickly mallow was recovered at the North Hill (sida spinosa). Raymer, "Draft data."

29. Charles B. Purdue, Jr., Thomas E. Barden and Robert K. Phillips, editors, *Weevils in the Wheat, Interviews with Virginia Ex-Slaves* (Charlottesville, University Press of Virginia, 1976), 73, 221-222, 263, 310; Ywone D. Edwards-Ingram, "An Inter-Disciplinary Approach to African-American Medicinal and Health Practices in Colonial America," in *The Watermark* 20(1997), 71; Raymer, *New South Technical Report* #376.

30. Poppies, violets, pigweed, and jimsonweed were commonly used as ornamentals by white gardeners of the period. Betts, *Jefferson's Garden Book,* 24, 644; Raymer, *New South Technical Report* #376, 40, 46-47.

31. Heath and Bennett, *Historical Archaeology,* 41-45.

32. Betts, *Jefferson's Farm Book,* 50, 52, 77, 163.

33. Idem, *Jefferson's Garden Book,* 166.

34. Subsequent owners of the estate made reference to provision grounds. Hutter Farm Journal, 1844-1854, (manuscript on file, Thomas Jefferson's Poplar Forest).

35. Barbara J. Heath, "Engendering Choice: Slavery and Consumerism in Central Virginia" (paper presented at the annual meeting of the Society for Historical Archaeology Conference on Historical and Underwater Archaeology, Atlanta, GA, 1998); see also Bear and Stanton, *Jefferson's Memorandum Books.*

36. Heath and Bennett, *Historical Archaeology,* 39-42; Heath, "Engendering Choice."

37. Because of the natural acidity of the Poplar Forest soils, bone preservation was relatively poor. Those bones that did survive represent the more durable ones (i.e. teeth or long bones) or fragments preserved in features whose soil chemistry had been altered historically by the addition of ash or other materials that neutralized the soil. Additionally, many bones suffered weathering, burning, butchering, gnawing, and other modifications, both intentional and natural, that made it impossible to identify them beyond broad categories such as "unidentified bird" or "unidentified mammal." Consequently, the following discussion provides a fairly sketchy assessment of the importance and variety of meat in the diets of enslaved residents of each site.

38. Susan Trevarthen Andrews, "Faunal Analysis of Slave Quarter Site at Poplar Forest" (manuscript on file, Thomas Jefferson's Poplar Forest, Virginia, 1993); Betts, *Jefferson's Garden Book,* 467; idem, *Jefferson's Farm Book,* 48.

39. Archaeologists did collect quantities of eggshells at both sites, suggesting the dietary importance of eggs, but raising questions about the low frequency of chicken bones.

40. Susan Trevarthen Andrews, "Faunal Analysis of North Hill Features, Poplar Forest," (manuscript on file, Thomas Jefferson's Poplar Forest, Virginia, 1999), 19.

41. Bones from eastern cottontail rabbits, eastern gray squirrels, opossums, a woodchuck, a raccoon, and a fresh water bass or sunfish were recovered at the North Hill; white tailed deer, opossum, rabbits, and gray squirrels were found at the Quarter. Andrews, "Faunal Analysis" 1993; idem, "Faunal Analysis for Poplar Forest Feature 1206" (manuscript on file, Thomas Jefferson's Poplar Forest, Virginia, 1995); idem, "Poplar Forest Quarter Site Faunal Analysis" (manuscript on file, Thomas

Jefferson's Poplar Forest, Virginia, 1996); idem, "Faunal Analysis of North Hill, Poplar Forest" (manuscript on file, Thomas Jefferson's Poplar Forest, Virginia, 1998); idem, "Faunal Analysis of North Hill Features" 1999.

42. Bear and Stanton, *Jefferson's Memorandum Book,* 500. Jefferson purchased squirrel skins from Jame Hubbard, an enslaved waterman in 1780. Heath notes in "Slavery and Consumerism: A Case Study from Central Virginia," in *African-American Archaeology Newsletter* 19 (1)(1997), 6, that a merchant who operated a store near Poplar Forest recorded purchasing raccoon skins from one of his enslaved customers.

43. Betts, *Jefferson's Garden Book,* 517-518; idem, *Jefferson's Farm Book,* 48, 58, 149, 417; Jefferson to Jeremiah Goodman, February 3, 1814, ViU; Jefferson to Patrick Gibson, November 3, 1814, NHi. In addition to corn, wheat, herring, and pork, Poplar Forest slaves received milk, salt, and whiskey.

44. Heath, *African-American Archaeology Newsletter;* Heath, "Engendering Choice." Will kept shop accounts in New London and Lynchburg. Joel Yancey to Jefferson, October 14, 1819, MHi. Others frequented the Lynchburg Sunday markets as buyers and sellers. When a Sunday cold snap threatened the tobacco crop in 1819, overseer Joel Yancey discovered "every man except Armstead at B. Creek had gone off and 2 of the women to Lynchburg, and 2 men and 2 women from Tomahawk…." See also John Early, "Diary of John Early, Bishop of the Methodist Episcopal Church, South," in *Virginia Magazine of History and Biography* 35 (1927), 7, on the African Meeting House in the Forest area.

45. Jefferson to James Lyle, April 5, 1811, MHi; Jefferson to Jeremiah Goodman, August 9, 1812, DLC; James A. Bear, editor, *Jefferson at Monticello* (Charlottesville: University Press of Virginia, 1967), 67-68. Jefferson's social and economic relationships within the local community necessitated the regular movement of slaves passing throughout the neighborhood conducting his business. Wagoners carried flour to local mills, tobacco to market, and supplies from the waterfront in Lynchburg back to the plantation.

Jefferson to Charles Clay, December 18, 1811, MHi; Jefferson to Charles Clay, December 14, 1812, DLC; Jefferson to Charles Clay, May 5, 1813, MHi, Charles Clay to Jefferson, September 5, 1810, MHi; Charles Clay to Jefferson, May 1, 1813, MHi. Messenger service seems to have been the task of teenage boys and girls. Over the course of three years, they delivered notes, surveying equipment, garden seeds, and a copy of Tacitus to Jefferson's friend, Charles Clay, who lived at nearby Ivy Hill. In return, Clay sent his own slaves to Poplar Forest carrying rye seeds, a basket of asparagus, and a variety of notes.

William Steptoe to Jefferson, July 24, 1819, MHi; Ellen Randolph to Martha Randolph, August 24, 1819, ViU. When Jefferson sent a messenger to physician William Steptoe, asking leave to borrow his syringe, Steptoe replied that the desired object was "so often lent and sent about the neighborhood that I am sorry to say I do not know who had it last. However I will dispatch a boy after it." Two enslaved maids belonging to Mrs. Walker, whose property bounded Poplar Forest to the west, made weekly deliveries of fruits, vegetables, sweetmeats, and lamb to Jefferson's granddaughters during the summer of 1819.

BCOB 1781, 333-334; BCSB1:351; BCSB2:166. Unsanctioned travel within the environs of Poplar Forest also occurred. In 1781, Jack and Will joined Peter, the slave of John Thompson, Sr., in breaking into the mill and stillhouse owned by Thompson's son. The three were caught, tried, and punished for their actions. Peter probably lived on Thompson's tract of land adjoining Poplar Forest to the east.

46. Jefferson to Jeremiah Goodman, December 31, 1811, ViU; Jefferson to Jeremiah Goodman, January 6, 1815, ViU; Jefferson to Joel Yancey, March 6, 1817, MHi; Jefferson to Joel Yancey, January 11, 1818, MHi; Joel Yancey to Jefferson, January 9, 1819, MHi; Joel Yancey to Jefferson, December 31, 1819, MHi; Jefferson to John Wayles Eppes, October 22, 1820, MHi; Betts, *Jefferson's Farm Book,* 42-44. In the years following Jefferson's retirement, wagoners made frequent journeys between the two properties, carrying furnishings, farm equipment and food from one plantation to another.

Jefferson to Edmund Bacon, December 5, 1811, DLC; Jefferson to Jeremiah Goodman, December 13, 1812, ViU; Jefferson to Jeremiah Goodman, January 8, 1813, ViU; Jefferson to Jeremiah Goodman, January 6, 1815, ViU; Betts *Jefferson's Garden Book,* 534-535. Workers moved between the two places when Jefferson needed extra hands at harvest or planting time. He also sent teenage boys and girls to Monticello to learn a trade in his nailery or textile factory. Enslaved men, as well as teenage boys drove cattle, hogs, and sheep from Bedford to Albemarle in the early winter for slaughter.

47. Heath, *Hidden Lives,* 16, 69, note 12. To create productive farms, Jefferson split most of the families that he owned between his two properties.

He granted family members to visit their kinspeople from time to time. Such visits usually took place at Christmas, and often individuals accompanied wagons bearing supplies to Poplar Forest, or aided in the driving of livestock on the return journey.

48. Jefferson to Martha Randolph, November 10, 1816, MHi; Joel Yancey to Jefferson January 9, 1819, MHi; Jefferson to Joel Yancey, January 17, 1819, MHi. While Johnny and Randall made the reverse trip in about three days, other slaves accompanying the wagon and herds of recalcitrant livestock northward might be on the road for eight days or longer.

Joel Yancey for Nace, March 12, 1812, MHi; Jeremiah Goodman to Jefferson, December 30, 1814, ViU; Jefferson to Jeremiah Goodman, January 6, 1815, ViU; Joel Yancey to Jefferson, October 14, 1819, MHi. It took Nace two days to traverse the thirty-seven miles from Poplar Forest to Henry Flood's tavern in Buckingham County when he traveled to Monticello on an early spring trip in 1821. Phil Hubbard made shorter work of the journey from Bedford to Albemarle, taking only two days to traverse the one hundred miles between the two plantations. His was an unauthorized trek, triggered by anger about an overseer's refusal to recognize his marriage. At Monticello, he sought, and gained Jefferson's support. Five years later, his nephew, William, ran to Monticello, this time to contest being asked to work on a Sunday.

Joel Yancey to Jefferson, December 24, 1818, MHi. Whether others apprehended between the two plantations had larger plans for freedom is unclear. In 1813, Hercules was detained in Buckingham jail and returned to Poplar Forest. Two other young Monticello men, Dick and Moses, arrived a Poplar Forest on stolen horses, and without a pass, at Christmas in 1818. When the owners of one horse arrived, Dick claimed that he had found the horse, and that they had come to Bedford to visit family. He was whipped for the offense. Moses declined to make excuses, escaping before he could be punished.

49. *Lynchburg Virginian,* August 31, 1824, 4. Bob, a young man who had been raised by Jefferson at Monticello, and subsequently sold, was employed by his fourth owner as a waterman. His owner, in drafting the advertisement for his return, recognized the importance of kinship, stating that "he has relations at Monticello, at Mr. Jefferson's plantation near Lynchburg, in Richmond…and at Wilton below Richmond." He added that it was most likely that Bob was making his way to Monticello or Poplar Forest. Whether he succeeded, or was captured and returned, is not known.

50. Reuben Perry to Jefferson, March 29, 1811, ViW; Jefferson to Reuben Perry, April 16, 1812, ViW; Daniel Meaders, *Advertisements for Runway Slaves in Virginia 1801-1820* (New York: Garland Publishing Inc., 1997), 161. In the spring of 1811, while Jefferson was visiting Poplar Forest, Jame Hubbard fled Monticello by boat with Harry, a waterman who belonged to Jefferson's son-in-law. In a previous flight, he had "attempted to get out of the state Northwardly" and had been apprehended. This time he made his way to Lexington, where he lived for nearly a year before he was discovered. He eluded capture, getting as far as Pendleton County, in what is now West Virginia, before he was arrested.

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